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<110> GIVER, LORRAINE J.
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VOGEL, KURT

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<140> US 09/905,666

<141> 2001-07-13

<150> 60/217,954

<151> 2000-07-13

<150> 60/300,378

<151> 2001-06-21

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<211> 648

<212> DNA

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<212> DNA

<213> Bacillus sp.

<400> 16

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aacaatggtc cgcgtctatc g agattcgctc aa agatgtgt tag acaaaac agga gccaaa 300
aaagtagata ttgtggctca t agtatgggc gg agcgaaca cat tatacta tatt aagaat 360
ctagatggtg gcgataaaat t gagaacgct gt cacaattg gtg gagcaaa cgga ctcggt 420
tcaagcagag cattaccagg c acagatcca aa tcaaaaaa ttc ttacac atcc gtctat 480
agctcagcag atcttattgt cgtcaacagt ct ctctcggt taa ttggcgc aaga aacgct 540
caaatccatg gcgttggaac t atcgggtcta tt aacctcaa gcc tagtcaa agga tatatt 600
aaagaaggac tgaacggcgg aggccaaaat acaaattaa 639
```

<210> 19

<211> 648
 <212> DNA
 <213> Bacillus sp.

<400> 19
 atgaaagtga tttttgttaa gaaaaggagt ttgcaaattc ttgttgccct tgccttagtg 60
 ataggttcaa tggccttcat ccagccaaaa gaatacaaag cagctgagca caatccggtt 120
 gtgatggtac atggtattgg aggagcgtct tataactttg cttcgattaa aagtattttg 180
 gttaaaccaag gctgggatcg aaaccaatta ttgctatcg atttcataga caaaacaggg 240
 aataaccgca acaatggtcc tcgtttatct agattcgtca aagatgtgct agacaaaacg 300
 ggtgccaaaa aagtagatat tgtggcgcgt agtatgggag gggcgaacac gcta tactat 360
 attaagaatc tagatggcgg cgataaaatt ga aaacgtcg tca ccattgg tggagcaaac 420
 ggactcgttt cactcagagc attaccagga acagatccaa atcaaaaaat tctctataca 480
 tctgtctata gctcagccga ttgattgtc gtcaacagcc tttcgcggtt aactggcgca 540
 agaaatgtcc tgatccacgg cgttgggcat atcggtctat taa cctcaag ccaagtga 600
 ggtatatta aagaaggact gaacggcggg ggctaaata caa attaa 648

<210> 20
 <211> 642
 <212> DNA
 <213> Bacillus sp.

<400> 20
 atgaaatttg taaaaagaag gatcattgca ctgttaacaa ttttgatgct gtctgttaca 60
 tcgctgtttg cgttgcaacc gtcagcaaaa gcgcgtgaac acaatccagt cggtatgggt 120
 cacgggtattg gaggggcatc attcaatttt gcgggaatta agagctatct cgta tctcag 180
 ggctggtcgc gggacaagct gtatgcagtt gatctcaggg acaagacagg aaataaccgc 240
 aacaatggtc cgcgtctatc taaattcgtc aaagatgtgt tagacaaaac ggggtgccaaa 300
 aaagtagata ttgtggctca tagtatgggc ggggcgaaca cgtatacta tattagaat 360
 ctagatggcg gcgataaaat tgagaacgtt gt cacaattg gcggagcaaa cgga ctcggt 420
 tcaagcagag cattaccagg cacagatcca aatcaaaaaa ttc tttacac atccgtctac 480
 aagctcagcc gatctcattg tcgtcaacag tctctctcgt ttaattggct gcaagaaaca 540
 gtccaaatcc atggcggttg acatctcgtt ctattaacct caagccaagt caaaggatat 600
 attaaagaag gactgaacgg cgggggacta aatacaaatt aa 642

<210> 21
 <211> 544
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic nucleotide sequence

<400> 21
 tgaacacaat ccagttgtta tgggttcacgg tat tggaggg gcat cattca attttgcggg 60
 aattaagagc tatctcgtat ctacgggctg gt cgcggggc aagctgtatg cgggtgattt 120
 ttgggacaag acagggaagc attataacaa tggcccggtt tta tgcggtt ttgtgaaaaa 180
 ggtattagat gaaacgggtg cgaaaaaagt ggatattgtc gctc acagca tgggcggcgc 240
 taacacgctt tactacataa aaaatctgga cggcggaat aaa gttgaaa acgt cgtaac 300
 gcttggcggc acgaaccgtt cgacgacaag caaggcgctt ccgggaacag atccaatca 360
 aaagatttta tacacatcca ttacagcag tgccgatatg attgtcatga attacttatc 420
 aaaattagac ggtgctaaaa atgttcaaat tcatggcggt gggcacattg gtttattgat 480
 gaacagccaa gtcaacagcc tgattaaaga aggactgaac ggcgggggac tcaatcgaa 540
 ttga 544

<210> 22
 <211> 544

<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
nucleotide sequence

<400> 22
tgaacacaaat ccagttgtta tgggttcacgg tattggaggg gcatcattca attttgcggg 60
aattaagagc tatctcgtat ctcagggctg gt cagggggc aagctgtatg cggttgattt 120
ttgggacaag acagggacga attataacaa tggcccggta tta tctagat tctg caaaga 180
tgtgctagac aaaacgggtg cgaaaaaagt ggatattgtc gct cacagca tggggggcg 240
gaacacactt tactacataa aaaatctgga cggcggaaat aaa attgaaa acgt cgtaac 300
gcttggcggc gcgaaccgtt cgacgacaag ca aggcgctt ccgggaacag atccaaatca 360
aaagatttta tacacatcca ttacagcag tgccgatatg attgtcatga atta cttatc 420
aaaattagac ggggctaaaa atgttcaa atcatggcggtt gggcacattg gttt attgat 480
gaacagccaa gtcaacagcc tgattaaaga aggactgaac ggcgggggac tcaat acgaa 540
ttga 544

<210> 23
<211> 544
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
nucleotide sequence

<400> 23
tgaacacaaat ccagttgtta tgggttcacgg tattggaggg gcatcattca attttgcggg 60
aattaagagc tatctcgtat ctcagggctg gt cagggggc aagctgtatg cggttgattt 120
ttgggacagg acagggacga attataacaa tggcccggta tta tcacgat ttgt gaaaaa 180
ggtattagat gaaaccggtg cgaaaaaagt gga cattgtc gctc acagca tgggt ggcgc 240
gaacacactt tactacataa aaaatctgga cggcggaaat aaa attgaaa acgt cgtaac 300
gcttggcggc gcgaaccgtt tgacgacaag ca aggcgctt ccgggaacag atccaaatca 360
aaagatttta tacacatcca ttacggcag tgccgatatg attgtcatga atta cttatc 420
aaaattagac ggtgctaaaa acgttcaa atcatggcggtt gggcacattg gttt attgat 480
gaacagccaa gtcaacagcc tgattaaaga aggactgaac ggcgggggac tgaa taaaa 540
ttga 544

<210> 24
<211> 544
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
nucleotide sequence

<400> 24
tgaacacaaat ccagttgtta tgggttcacgg tatcggaggg gcatcattca attttgcggg 60
aattaagagc tatctcgtat ctcagggctg gtcacggggc aagctgtatg cggttgattt 120
ttgggacaag acagggacga attataacaa tggcccggta tta tcacgat ttgt gcaaaa 180
ggtttttagac gaaacgggtg cgaaaaaagt ggatattgtc gct cacagca tggggggcg 240
gaacacactt tactacataa aaaatctgga cggcggaaat aaa attgaaa acgt cgtaac 300
gcttggcggc gcgaaccgtt cgacgacaag ca aggcgctt ccgggaacag atccaaatca 360
aaagatttta tacacatcca ttacggcag tgccgatatg attgtcatga atta cttatc 420
aaaattagac ggtgctaaaa acgtacaa atcatggcggtt gggcacattg gttt attgat 480
gaacagccaa gtcaacagcc tgattaaaga aggactgaac ggcgggggac tcaat acgaa 540

ttga

544

<210> 25

<211> 544

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
nucleotide sequence

<400> 25

tgaacacaat ccagttgtta tggttcacgg tattggaggg gcatcattca attttgcggg 60
aattaagagc tatctcgat ctcagggctg gt cgcggggc aagctgtatg cgggtgattt 120
ttgggacaag acagggacga attataacaa tggcccggta tta tcacgat ttgtgcaaaa 180
ggtttttagac gaaacgggtg cgaaaaaagt gga tattgtc gctcacagca tgggcggcgc 240
gaacacactt tactacataa a aaatttga tggcggtaaat aaa attgaaa acgtcgtcac 300
cattgggtgga gcaaacggac t cgtttcaag cagagcatta ccaggcacag atccaaatca 360
aaaaattctt tacacatccg t ctatagctc agcagatctt attgtcgtca acagtctctc 420
tcgtttaatt ggcgcaagaa acgtccaaat cc atggcggtt gga catatcg gtctattaac 480
ctcaagccaa gtcaaaggat a tattaaga agggcttaac ggcgggggcc acaa tacgaa 544
ttga

<210> 26

<211> 544

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
nucleotide sequence

<400> 26

tgaacacaat ccagttgtta tggttcacgg tatcggagga gcttcataca attttgcggg 60
aattaagagc tatctcgat ct cagggctg gtcacggggc aagctgtatg cgggtgattt 120
ttgggacaag acagggacga attataacaa tggcccggta tta tcacgat ttgtgcaaaa 180
ggtttttagac gaaacgggtg cgaaaaaagt ggatattgtc gctcacagca tgggtggcgc 240
gaacacactt tactacataa a aaatctgga cgcgggaaat aaaa ttgaaa acgtcgtaac 300
gcttggcggc gcgaaccgtt tgacgacaag cagggcgctt ccgggaacag atccaaatca 360
aaagatttta tacacatcca ttacagcag tgccgatatg attgtcatga attacttatc 420
aaaattagac ggtgctaaaa acgtacaaat tc atggcggtt gggcacattg gtttattgat 480
gaacagccaa gtcaaaggat atattaaga aggactgaac ggcggaggcc taaat acgaa 544
ttga

<210> 27

<211> 544

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
nucleotide sequence

<400> 27

tgaacacaat ccagttgtta tggttcacgg tattggaggg gcatcattca gttttgcggg 60
aattaagagc tatctcgat ctcagggctg gt cagggggc aagctgtatc cgggtgattt 120
ttgggacaag acagggacga attataacaa tggcccggta tta tcacgat ttgtgcaaaa 180
ggtttttgac gaaacgggtg cgaaaaaagt ggatattgtc gctcacagta tgggtggcgc 240

gaacacactt tactacataa aaaatctgga cggcggaat aaaattgaaa acgtcgtaac 300
gcttggcggc gcgaaccgtt tgacgacaag caaggcgctt ccgggtactg atcccaacca 360
aaagatcttg tacacatccg ttacagtag tgctgatatg attggtatga attacttatc 420
aaaattagac ggggctaataa atgttcaaat tcatggcggt gggcacattg gtttattgat 480
gaacagccaa gtcaacagcc tgattaaaga aggactgaac ggcgggggcc taaaatacaa 540
ttga 544

<210> 28

<211> 544

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
nucleotide sequence

<400> 28

tgaacacaat ccagttgtta tggttcacgg tattggagg gcatcattca gtttgcggg 60
aattaagagc tatctcgtat ctacgggctg gtacggggc aagctgtatg cgggtgattt 120
ttgggacaag acagggacga attataacaa tggcccggtt ttatcacgat ttgtgcaaaa 180
ggttttggac gaaacgggtg cgaataaagt ggatattgtc gctcacagta tgggtggcgc 240
gaacacactt tactacataa aaaatctgga cggcggaat aaaaattgaaa acgtcgtaac 300
gcttggcggc gcgaaccgtt tgacgacaag caaggcgctt ccgggtactg atcccaacca 360
aaagatcttg tacacatccg ttacagtag tgctgatatg attggtatga attacttatc 420
aaaattagac ggggctaataa atgttcaaat tcatggcggt gggcacattg gtttattgat 480
gaacagccaa gtcaacagcc tgattaaaga aggactgaac ggcgggggcc taaaatacaa 540
ttga 544

<210> 29

<211> 544

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
nucleotide sequence

<400> 29

tgaacacaat ccagttgtta tggttcacgg tatcgaggga gcttcataca gtttgcggg 60
aattaagagc tatctcgtat ctacgggctg gtacggggc aagctgtatg cgggtgattt 120
ttgggacaag acagggacga attataacaa tggcccggtt ttatcacgat ttgtgcaaaa 180
ggtttttagac gaaacgggtg cgaataaagt ggatattgtc gctcacagca tgggtggcgc 240
gaacacactt tactacataa aaaatctgga cggcggaat aaaattgaaa acgtcgtaac 300
gcttggcggc gcgaaccgtt tgacgacaag caaggcgctt ccgggaacag atcccaacca 360
aaagatcttg tacacatccg ttacagtag tgccgatatg attgtcatga attacttatc 420
aaaattagac ggggctaataa atgttcaaat tcatgggtgtc ggcataatcg gccttctgta 480
cagcagccaa gtcaacagcc tgattaaaga aggactgaac ggcgggggcc aaaaatacaa 540
ttga 544

<210> 30

<211> 544

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
nucleotide sequence

31
cont

```

<400> 30
tgaacacaat ccagttgtta tggttcacgg ta tcggagga gct tcataca gttt tgcggg 60
aattaagagc tatctcgtat ctcagggctg gt cacggggc aag ctgtatg cggg tgattt 120
ttgggacaag acagggacga a ttataacaa tg gcccggtta tta tcacgat ttgt gcaaaa 180
ggttttagac gaaacgggtg c gaaaaaagt gg atattgtc gct cacagca tggg gggcgc 240
gaacacactt tactacataa aa aatctgga cgg cggaaat aaaa ttgaaa acgtc gtaac 300
gcttggcggc gcgaaccgtt t gacgacaag ca aggcgctt ccg ggaactg atcc caacca 360
aaagatcttg tacacatccg t ttacagtag tg ctgatatg att gttatga atta cttatc 420
aaaattagac ggggctaaaa a tgttcaaat tc atggcggtt ggg cacactg gttt attgat 480
gaacagccaa gtcaacagcc t gattaaaga ag gactgaac ggc gggggcc acaa taaaa 540
ttga 544

```

```

<210> 31
<211> 544
<212> DNA
<213> Artificial Sequence

```

```

<220>
<223> Description of Artificial Sequence: Synthetic
nucleotide sequence

```

```

<400> 31
tgaacacaat ccagttgtta tggttcacgg ta ttggagga gca tcataca attt tgcggg 60
aattaagagc tatctcgtat ctcagggctg gt cacggggc aag ctgtata cggg tgattt 120
ttgggacaag acagggacga a ttataacaa tgg cccggtta ttat cacgat ttgt gcaaaa 180
ggttttagac gaaacgggtg c gaaaaaagt gg atattgtc gct cacagca tggg tggcgc 240
gaacacactt tactacataa a aatctgga cgg cggaaat aaa attgaaa acgt cgtaac 300
gcttggcggc gcgaatcgtc t tgtaacagg ca aggcgctt ccg ggaacag atccc aatca 360
aaagattttg tacgcacccg t ttacagcag tg ccgatatg att gtcatga atta cttatc 420
aaaattagac ggtgctaaaa a cgttcaaat tc atggcggtt ggg cacattg gttt attgat 480
gaacagccaa gtcaacagcc t gattaaaga ag gactgaac ggc gggggcc tgaa taaaa 540
ttga 544

```

```

<210> 32
<211> 544
<212> DNA
<213> Artificial Sequence

```

```

<220>
<223> Description of Artificial Sequence: Synthetic
nucleotide sequence

```

```

<400> 32
tgaacacaat ccagtcgtta tggttcacgg ta ttggaggg gca tcattca attt tgcggg 60
aattaggagc tatctcgtat ctcagggctg gt cacggggc aag ctgtatg cggg tgattt 120
ttgggacagg acagggacga a ttataacaa tg gcccggtta tta tcacgat ttgt gcaaaa 180
ggttttagat gaaacgggtg c gaaaaaagt gg acattgtc gct cacagca tggg tggcgc 240
gaacacactt tactacataa a aatctgga cgg cggaaat aaa attgaaa acgt cgtaac 300
gcttggcggc gcgaaccgtt t gacgacaag ca aggcgctt ccg ggaacag atcc aatca 360
aaagatttta tacacatcca t ttacagcag tg ccgatatg att gtcatga atta cttatc 420
aaaattagac ggggctaaaa a tgttcaaat cc atggcggtt gga cacatcg gcct tctgta 480
cagcagccaa gtcaacagcc t gattaaaga ag gactgaac ggc gggggcc tcaa tacgaa 540
ttga 544

```

```

<210> 33
<211> 544
<212> DNA
<213> Artificial Sequence

```

BI
Cont

<220>

<223> Description of Artificial Sequence: Synthetic
nucleotide sequence

<400> 33

```
tgaacacaat ccagttgtta tggttcacgg ta tcggaggg gcatcattca attt tgcggg 60
aattaggagc tatctcgtat ctcagggctg gt cacggggc aagctgtatg cggg tgattt 120
ttgggacaag acagggacga at tataacaa tggcccggta ttat cacgat ttgtg caaaa 180
ggtttttagac gaaaccggtg cgaaaaaagt ggacattgtc gct cacagca tggg cggcgc 240
taacacgctt tactacataa a aaatctgga cggcggaaat aaa attgaaa acgt cgtaac 300
gcttggcggc acgaaccgtt tgacgacaag caggcgctt ccgggaacag atcca aatca 360
aaagatttta tacacatcca ttacagcag tgccgatatg attgtcatga atta cttatc 420
aaaactagac ggtgctaaaa acgttcaaat tc atggcggtt ggg cacattg gttt attgat 480
gaacagccaa gtcaacagcc tgattaaaga aggactgaac ggcgggggac tcaa tacgaa 540
ttga 544
```

<210> 34

<211> 544

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
nucleotide sequence

<400> 34

```
tgaacacaat ccagttgtta tggttcacgg ta ttggaggg gcatcattca attt tgcggg 60
aattaagagc tatctcgtat ctcagggctg gt cgcggggc aagccgtatg cggg tgattt 120
ttgggacaag acagggacga attataacaa tggcccggta tta tcacgat ttgt gcaaaa 180
ggtttttagac aaaaagggtg cgaaaaaagt ggatattgtc gct cacagca tgggg ggcgc 240
gaacacactt tactacataa a aaatctgga cggcggaaat aaagtgtgaaa acgt cgtaac 300
gcttggcggc gcgaaccgtt tgacgacaag caaggcgctt ccgggaacag atcc aatca 360
aaagatttta tacacatcca ttacagcag tgccgatatg attgtcatga atta cttatc 420
aaaattagac ggtgctaaaa acgttcaaat tc atggcggtt ggg cacattg gttt attgat 480
gaacagccaa gtcaacagcc tgattaaaga aggactgaac ggcgggggac tcaa tacgaa 540
ttga 544
```

<210> 35

<211> 544

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
nucleotide sequence

<400> 35

```
tgaacacaat ccagttgtta tggttcacgg ta ttggaggg gcatcattca attt tgcggg 60
aattaagagc tatctcgtgt ctcagggctg gc cgcggggc aagctgtatg cagt tgattt 120
ttgggacaag acagggacga attataacaa tggcccggta tta tcacgat ttgt gcaaaa 180
ggtttttagac gaaaccggtg cgaaaaaagt ggatattgtc gct cacagca tggg tggcgc 240
gaacacactt tactacataa a aaatctgga cggcggaaat aaagtgtgaaa gcgt cgtaac 300
acttggcggc gcgaatcgtc ttgtaacagg caaggcgctt ccgggaactg atccc aacca 360
aaagatttta tacacatcca ttacagcag tgccgatatg attgtcatga atta cttatc 420
aaaattagac ggtgctaaaa acgttcaaat tc atggcgctt gga catatcg gcct tctgat 480
gaacagccaa gtcaacagcc tgattaaaga aggactgaac ggcgggggac acaa taaaa 540
ttga 544
```

<210> 36
<211> 544
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
nucleotide sequence

<400> 36
tgaacacaat ccagttgtta tggttcacgg ta tcggaggg gcatcattca gttt tgcggg 60
aattaggagc tatctcgtat ctcagggctg gc cgcgggac aag ctgtatg cggg tgattt 120
ttgggacaag acaggcaca a ttataacaa tggcccggta tta tcacgat ttgt gcaaaa 180
ggtattagat gaaaccggtg cga aaaaagt gga tattgtc gcc acagca tgggt ggcgc 240
gaacacactt tactacataa a aaatctgga cggcggaaat aaagt gaaa acgt cgtgac 300
gcttggcggc gcc aaccgtt tgacgacagg ca aggcgctt ccgggtactg atcc caatca 360
aaagatttta tacacatccg tttacagcag tg ccgatatg att gtcata ga atta cttatc 420
aaaattagac ggtgctaaaa a cgttcaaat tcatggcggt ggg cacattg gttt attgat 480
gaacagccaa gtcaacaggc tgattaaaga aggactgaac ggcggaggcc acaa taaaa 544
ttga

<210> 37
<211> 544
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
nucleotide sequence

<400> 37
tgaacacaat ccagttgtta tggttcacgg ta tcggaggg gcatcattca gttt tgcggg 60
aattaggagc tatctcgtat ctcagggctg gc cgcgggac aag ctgtatg cggg tgattt 120
ttgggacaag acaggcaca a ttataacaa tggcccggta tta tcacgat ttgt gcaaaa 180
ggtattagat gaaaccggtg cga aaaaagt ggatattgtc gcc tacagca tggg tggcgc 240
gaacacactt tactacataa a aaatctgga cggcggaaat aaagt gaaa acgt cgtgac 300
gcttggcggc gcc aaccgtt tgacgacagg caa ggcgctt ccgggtactg atccc aatca 360
aaagatttta tacacatccg tttacagcag tg ccgatatg att gtcata ga atta cttatc 420
aaaattagac ggtgctaaaa a cgttcaaat tcatggcggt ggg cacattg gttt attgat 480
gaacagccaa gtcaacaggc tgattaaaga aggactgaac ggcggaggcc acaa taaaa 544
ttga

<210> 38
<211> 544
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
nucleotide sequence

<400> 38
tgaacacaat ccagttgtta tggttcacgg ta tcgggggg gcatcattca gttt tgcggg 60
aattaggagc tatctcgtat ctcagggctg gc cgcgggac aag ctgtatg cggg tgattt 120
ttgggacaag acaggcaca a ttataacaa tggcccggta tta tcacgat ttgt gcaaaa 180
ggtattagat gaaaccggtg cga aaaaagt gga tattgtc gcc acagca tgggt ggcgc 240
gaacacactt tactacataa a aaatctgga cggcggaaat aaagt tggaa acgt cgtgac 300
gcttggcggc gcc aaccgtt tgacgacagg ca aggcgctt ccgggtactg atcc caatca 360

```

aaagatttta tacacatccg ttacagcag tgccgatatg attgtcatga attacttattc 420
aaaattagac ggtgctaaaa acgttcaaat tcatggcggtt gggcacattg gtttattgat 480
gaacagccaa gtcaacaggc tgattaaaga aggactgaac ggcggaggcc acaatataaaa 540
ttga 544

```

<210> 39

<211> 544

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
nucleotide sequence

<400> 39

```

tgaacacaat ccagttgtta tggttcacgg tatcggaggg gcatcattca gttttgcggg 60
aattaggagc tatctcgtat cccagggtg gcgcggggac aagctgtatg cgggtgattt 120
ttgggacaag acaggcacia attataacaa tggcccggtt ttatcacgat ttgtgcaaaa 180
ggtattagat gaaaccggtg cgaaaaaagt ggatattgtc gccacagca tgggtggcgc 240
gaacacactt tactacataa aaaatctgga cgcgggaaat aaagtgtgaa acgtcgtgac 300
gcttggcggc gccaacggtt tgacgacagg caaggcgctt ccgggtactg atccaatca 360
aaagatttta tacacatccg ttacagcag tgccgatatg attgtcatga attacttattc 420
aaaattagac ggtgctaaaa acgttcaaat tcatggcggtt gggcacattg gtttattgat 480
gaacagccaa gtcaacaggc tgattaaaga aggactgaac ggcggaggcc acaatataaaa 540
ttga 544

```

<210> 40

<211> 544

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
nucleotide sequence

<400> 40

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tgaacacaat ccagttgtta tggttcacgg tatcggaggg acatcattca attttgcggg 60
aattaagagc tatctcgtat ctcagggtg gtcacgggac aagctgtatg cgggtgattt 120
ttgggacaag acagggacga attataacaa tggcccggtt ttatcacgat ttgtgcaaaa 180
ggttttagac gaaaccggtg cgaaaaaagt ggatattgtc gctcacagca tgggcggcgc 240
caacacgctt tactacataa aaaatctgga cgcgggaaat aaattgtgaa acgtcgtgac 300
gcttggcggc gcgaaccggtt tgacgacaag caaggcgctt ccgggaacag atccaatca 360
aaagatttta tacacatcca ttacagcag tgcgatatg attgtcatga attacttattc 420
aaaattagac ggtgctaaaa acgttcaaat tcatggcggtt gggcacattg gtttattgat 480
gaacagccaa gtcaacagcc tgattaaaga aggactgaac ggcgggggccc acaatataaaa 540
ttga 544

```

<210> 41

<211> 544

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
nucleotide sequence

<400> 41

```

tgaacacaat ccagttgtta tggttcacgg tatcggaggg gcatcattca gttttgcggg 60

```

```

aattaagagc tatctcgat ctcagggctg gt cgcggggac aag ctgtatg cagt tgattt 120
tagtgacaaa acaggcacga a ttataacaa tggcccggta tta tcacgat ttgt gcaaaa 180
ggtttttagac gaaacgggtg cgaaaaaagt ggatattgtc gct cacagca tgggggggcgc 240
gaacacactt tactacataa a aaatctgga tggcggtaat aaaa ttgaaa acgtc gtaac 300
acttggcggc gcgaaccgtt t gacgacaag ca aggcgctt ccgggtactg atcc caacca 360
aaagatcttg tacacatcca t ttacagcag tg ccgatatg gtt gtcattga atta cttatc 420
aaaattagac ggggctaaaa a tgttcaa at tcatgggtgc ggg cacattg gttt attgat 480
gaacagccaa gtcaacagcc t gattaaaga ag gactgaac ggc gggggcc acaa tacgaa 540
ttga

```

<210> 42

<211> 544

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic nucleotide sequence

<400> 42

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taaacacaat ccagttgtta tggttcacgg ta ttggaggg gcatcataca attt tgcggg 60
aataaagagc tatctcgat ctcagggctg gt cgcggggac aag ctgtatg cagt tgattt 120
tagtgacaag acagggacga a ttataacaa tggcccggta tta tcacgat ttgt gcaaaa 180
ggtttttagac gaaacgggtg cgaaaaaagt ggatattgtc gct cacagca tgggggggcgc 240
gaacacactt tactacataa a aaatctgga cg gcggtaat aaa attgaaa acgt cgtaac 300
acttggcggc gcgaaccgtt t gacgacaag ca aggcgctt ccgggaacag atcc aaatca 360
aaagatttta tacacatcca t ttacagcag tgc cgatattg attgtcatga atta cttatc 420
aaaactagac ggtgctaaaa a cgttcaa at tcatggcgtt ggg cacattg gttt attgat 480
gaacagccaa gtcaacagcc t gattaaaga ag gactgaac ggc gggggat taaa tacgaa 540
ttga

```

<210> 43

<211> 544

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic nucleotide sequence

<400> 43

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tgaacacaat ccagttgtta tggttcacgg ta ttggaggg gcatcattca attt tgcggg 60
aattaagagc tatctcgaat ctcagggctg gt cacggggc aag ctgtatg cggg tgattt 120
ttgggacaag accgggacga a ttataacaa tggcccggta tta tcacgat ttgt gcaaaa 180
ggcttttagac gaaacgggtg cgaaaaaagt ggatattgtc gct cacagca tgggtgggcgc 240
gaacacactt tactacataa aa aatctgga cgg cggaat aaaa ttgaaa acgtc gtaac 300
gcttggcggc gcgaaccgtt t gacgacaag ca aggcgctt ccgggaacag atcc aaatca 360
aaagatttta tacacatcca t ttacagcag tg ccgatattg attgtcatga atta cttatc 420
aaaattagac ggtgctaaaa a cgttcaa at cc atggcgtt ggg cacattg gttta ttgat 480
gaacagccaa gtcaacagcc t gattaaaga ag gactgaac ggc gggggcc agaa tacgaa 540
ttga

```

<210> 44

<211> 544

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
nucleotide sequence

<400> 44

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tgaacacaat ccagttgtta tggttcacgg ta tcggaggg gcatcattca attttgcggg 60
aattaagagc tatctcgat ctcagggctg gt cagggggc aagctgtatg cgggtgattt 120
ttgggacagg acagggacga attataacaa tggcccggta tta tcacgat ttgtgaaaaa 180
ggtatttagat gaaaccggtg cgaaaaaagt ggatattgtc gctcacagca tggggggcgcg 240
gaacacactt tactacataa aaaatctgga cggcgggaaat aaaattgaaa acgtcgtcac 300
acttggcggc gcgaaccgtt cgacgacaag caaggcgctt ccgggaacag atccaaatca 360
aaagatttta tacacatcca ttacagcag tgccgatatg attgtcatga attacttatc 420
aaaattagac ggtgctaaaa acgttcaaat tc atggcggtt gggcacattg gtttattgat 480
gaacagccaa gtcaacagcc tgattaaaga agggctgaac ggcggaggcc agaa tacgaa 540
ttga 544
```

<210> 45

<211> 544

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
nucleotide sequence

<400> 45

```
tgaacacaat ccagttgtta tggttcacgg ta ttggaggg gcatcattca attttgcggg 60
aattaagagc tatctcgat ctcagggctg gt cgcggggc aagctgtatg cgggtgattt 120
ttgggacagg acagggacga attataacaa tggcccggta tta tcacgat ttgtgcaaaa 180
ggttttagac gaaacgggtg cgaaaaaagt ggatattgtc gctcacagca tggggggcgcg 240
gaacacactt tactacataa aaatctgga cggcgggaaat aaaa ttgaaa acgtcgtcac 300
acttggcggc gcgaaccgtt cgacgacaag caaggcgctt ccgggaacag atccaaatca 360
aaagatttta tacacatcca ttacagcag tgccgatatg attgtcatga attacttatc 420
aaaattagac ggtgctaaaa acgttcaaat tc atggcggtt gggcacattg gtttattgat 480
gaacagccaa gtcaacagcc tgattaaaga agggcttaac ggcgggggcc acaatagcaa 540
ttga 544
```

<210> 46

<211> 544

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
nucleotide sequence

<400> 46

```
tgaacacaat ccagtcgtta tggttcacgg ta ttggaggg gcatcattca attttgcggg 60
aataaagagc tatctcgat ctcagggctg gt cagggggc aagctgtatg cgggtgattt 120
ttgggacagg acagggacga attataacaa tggcccggta tta tcacgat ttgtgcaaaa 180
ggttttagac gaaacgggtg cgaaaaaagt ggatattgtc gctcacagca tgggtggcgcg 240
gaacacactt tactacataa agaactctgga cggcgggaaat aaaattgaaa acgtcgtaac 300
gcttggcggc gcgaaccgtt cgacgacaag caaggcgctt ccgggaacag atccaatca 360
aaagatttta tacacatcca ttacagcag tgccgatatg attgtcatga attgcttatc 420
aaaattagac ggtgctaaaa acgttcaaat tc atggcggtt gggcacattg gtttattgat 480
gaacagccaa gtcaacagcc tgattaaaga aggactgaac ggcgggggcc agaa tacgaa 540
ttga 544
```

<210> 47

<211> 544
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 nucleotide sequence

<400> 47
 tgaacacaaat ccagttgtta tggttcacgg tat tggaggg gcat cgttca attttgcggg 60
 aattaagagc tatctcgtat ctcagggctg gt cgcgggac aagctgtatg cagt tgattt 120
 caaagacaag acagggacga attataacaa tggcccggta tta tcacgat ttgt gaaaaa 180
 ggtattagat gaaacgggtg cgaaaaaagt ggatattgtc gct cacagca tggg cggcgc 240
 taacacgctt tactacataa agaattctgga cgcgcgaaat aaa attgaaa acgt cgtaac 300
 gcttggcggc gcgaaccgtt cgacgacaag ca aggcgctt ccgggtactg atcc caacca 360
 aaagatcttg tacacatccg ttacagtag tgctgatatg attgttatga atta cttatc 420
 aaaattagac ggtgctaaaa acgttcaaat tca tggcggtt gggcacattg gttta ttgat 480
 gaacagccaa gtcaacagcc tgattaaaga aggactgaac ggcggaggcc taaa taaaa 540
 ttga 544

<210> 48
 <211> 544
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 nucleotide sequence

<400> 48
 tgaacacaaat ccagttgtta tggttcacgg tattggaggg gcatcattca attttgcggg 60
 aattaagagc tatctcgtat ctcagggctg gt cgcgggac aagctgtatg cggg tgattt 120
 ttgggacaag acagggacga attataacaa tggcccggta tta tcacgat ttgt gaaaaa 180
 ggtattagat gaaacgggtg cgaaaaaagt ggatattgtc gct cacagca tggg tggcgc 240
 taacacgctt tactacataa a aaatctgga cgcgcgcat aaa attgaga acgt cgtaac 300
 acttggcggc gcgaaccgtt cgacgacaag caa ggcgctt ccgggaacag atcca aatca 360
 aaagatcttg tacacatccg ttacagtag tgctgatatg attgtcatga atta cttatc 420
 aaaattagac ggtgctaaaa acgttcaaat tcatggcggtt gggcacattg gttt attgat 480
 gaacagccaa gtcaacagcc tgattaaaga agggctgaac ggcggaggcc agaa tacgaa 540
 ttga 544

<210> 49
 <211> 544
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 nucleotide sequence

<400> 49
 tgaacacaaat ccagttgtta tggttcacgg tat tggaggg gcat cattca attttgcggg 60
 aattaagagc tatctcgtat ctcagggctg gt cgcgggac aagctgtatg cagt tgattt 120
 ttggggcaag acagggacga attataacaa tggcccggta tta tcgcgtt ttgt gaaaaa 180
 ggtattagat gaaacgggtg cgaaaaaagt ggatattgtc gct cacagca tggg gggcgc 240
 gaacacactt tactacataa a aaatctgga cgcgcgaaat aaa attgaaa acgt cgtaac 300
 acttggcggc gcgaaccgtt cgacgacaag ca aggcgctt ccgggaacag atccaaatca 360
 aaagatttta tacacatcca ttacagcag tgccgatatg attgtcatga atta cttatc 420
 aaaattagac ggggctaaaa atgttcaaat tca tggcggtt gggcacattg gttta ttgat 480

gaacagccaa gtcaacagcc tgattaaaga aggactgaac ggcggaggcc aaaa tacgaa 540
 ttga 544

<210> 50

<211> 544

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
 nucleotide sequence

<400> 50

tgaacacaat ccagttgtta tggttcacgg tattggaggg gcatcattca attt tgcggg 60
 aattaagagc tatctcgtat ctcagggctg gt cagggggc aag ctgtatg cagtt gattt 120
 ttgggacaag acagggacga attataacaa tggcccggta tta tcgcgtt ttgt gaaaaa 180
 ggtattagat gaaacgggtg cgaaaaaagt ggatattgtc gct cacagca tggg cggcgc 240
 taacacgctt tactacataa a aaatctgga tggcggtaat aaa attgaaa acgt cgtcac 300
 acttggcggc gcgaaccgtt cgacgacaag caa ggcgctt ccgggaactg atccc aacca 360
 aaagatttta tacacatcca ttacagcag tgccgatatg att gtcatga atta cttatc 420
 aaaattagac ggtgctaaaa acgttcaaatt tc atggcggtt ggg cacattg gttt attgat 480
 gaacagccaa gtcaacagcc tgattaaaga aggactgaac ggcggaggcc aaaat acgaa 540
 ttga 544

<210> 51

<211> 544

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
 nucleotide sequence

<400> 51

tgaacacaat ccagttgtta tggttcacgg tattggaggg gcatcattca attt tgcggg 60
 aattaagagc tatctcgtat ctcagggctg gt cagggggc aag ctgtatg cggg tgattt 120
 caaggacaag acaggcaca attataacaa tggcccggta tta tcacgat ttgt gaaaaa 180
 ggtattagat gaaacgggtg cgaaaaaagt ggatattgtc gct cacagca tggg cggcgc 240
 taacacgctt tactacataa a aaatctgga cgcgcgaaat aaa attgaaa acgt cgtaac 300
 gcttggcggc gcgaaccgtt cgacgacaag ca aggcgctt ccgggtactg atcc caacca 360
 aaagatttta tacacatcca ttacagcag tgccgatatg att gtcatga atta cttatc 420
 aaaattagac ggtgctaaaa acgttcaaatt tc atggcggtt ggg cacattg gttt attgat 480
 gaacagccaa gtcaacagcc tgattaaaga agggcttaac ggcgggggccc agaa tacgaa 540
 ttga 544

<210> 52

<211> 544

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
 nucleotide sequence

<400> 52

tgaacacaat ccagttgtta tggttcacgg tattggaggg gcatcattca attt tgcggg 60
 aattaagagc tatctcgtat ctcagggctg gtcgaggac gag ctgtatg cgggt gattt 120
 ttgggacgag acagggacga attataacaa tggcccggta tta tcacgat ttgt gcaaaa 180

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ggttttagac gaaaccggtg cgaaaaaagt ggatattgtc gct cacagca tgggtggcgc 240
gaacacactt tactacataa a aaatctgga cggcggaaat aaa attgaaa acgt cgtaac 300
gcttggcggc gcgaaccgtt cgacgacaag caaggcgctt ccgggtacag atccaaatca 360
aaagatttta tacacatcca ttacagcag tgccgatatg attgtcatga attacttattc 420
aaaattagac ggtgctaaaa atgttcaaat tcatggcggtt gggcacattg gtttattgat 480
gaacagccaa gtcaacagcc tgattaaaga agggtctgaac ggcggaggcc aaaat acgaa 540
ttga 544

```

<210> 53

<211> 544

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
nucleotide sequence

<400> 53

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tgaacacaaat ccagttgtta tggttcacgg tatcggaggg gcatcattca attttgcggg 60
aattaagagc tatctcgtat ct cagggtctg gtcgcgggac aagctgtatg cgggtgattt 120
tggggacaag acagggacga attataacaa tggcccggta ttatcacgat ttgtgcaaaa 180
ggttttagac gaaaccggtg cgaaaaaagt ggatattgtc gct cacagca tgggtggcgc 240
gaacacactt tactacataa a aaatctgga cggcggaaat aaagtgtgaaa acgt cgtaac 300
acttggcggc gcgaatcggt cgacgacaag caaggcgctt ccgggaacag atccaaatca 360
aaagatttta tacacatcca ttacagcag tgccgatatg attgtcatga attacttattc 420
aaaattagac ggtgctaaaa acgttcaaat tcatggcggtt gggcacattg gtttattgat 480
gaacagccaa gtcaacagcc tgattaaaga aggactgaac ggcggggggcc aaaa taaaa 540
ttga 544

```

<210> 54

<211> 544

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
nucleotide sequence

<400> 54

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tgaacacaaat ccagttgtta tggttcacgg tatcggaggg gcatcattca attttgcggg 60
aattaagagc tatctcgtat ct cagggtctg gtcacggggc aagctgtatg cgggtgattt 120
tggggacaag acagggacga attataacaa tggcccggta ttatcacgat ttgtgcaaaa 180
ggttttagac gaaaccggtg cgaaaaaagt ggatattgtc gct cacagca tgggtggcgc 240
gaacacactt tactacataa a aaatctgga cggcggaaat aaa attgaaa acgt cgtaac 300
acttggcggc gcgaaccgtt cgacgacaag caaggcgctt ccgggaacag atccaaatca 360
aaagatttta tacacatcca ttacagcag tgccgatatg attgtcatga attacttattc 420
aaaattagac ggtgctaaaa atgttcaaat tcatggcggtt gggcacattg gtttattgat 480
gaacagccaa gtcaacagcc tgattaaaga agggtctgaac ggcggaggac aaaat aaaaa 540
ttga 544

```

<210> 55

<211> 212

<212> PRT

<213> Bacillus pumilus

<400> 55

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Met Lys Phe Val Lys Arg Arg Ile Ile Ala Leu Val Thr Ile Leu Val
  1                      5                      10                     15

```

Leu Ser Val Thr Ser Leu Phe Ala Met Gln Pro Ser Ala Lys Ala Ala
 20 25 30
 Glu His Asn Pro Val Val Met Val His Gly Ile Gly Gly Ala Ser Tyr
 35 40 45
 Asn Phe Ala Gly Ile Lys Ser Tyr Leu Val Ser Gln Gly Trp Ser Arg
 50 55 60
 Gly Lys Leu Tyr Ala Val Asp Phe Trp Asp Lys Thr Gly Thr Asn Tyr
 65 70 75 80
 Asn Asn Gly Pro Val Leu Ser Arg Phe Val Gln Lys Val Leu Asp Glu
 85 90 95
 Thr Gly Ala Lys Lys Val Asp Ile Val Ala His Ser Met Gly Gly Ala
 100 105 110
 Asn Thr Pro Tyr Tyr Ile Lys Asn Leu Asp Gly Gly Asn Lys Ile Glu
 115 120 125
 Asn Val Val Thr Leu Gly Gly Ala Asn Arg Ser Thr Thr Ser Lys Ala
 130 135 140
 Leu Pro Gly Thr Asp Pro Asn Gln Lys Ile Leu Tyr Thr Ser Ile Tyr
 145 150 155 160
 Ser Ser Ala Asp Met Ile Val Met Asn Tyr Leu Ser Lys Leu Asp Gly
 165 170 175
 Ala Lys Asn Ala Gln Ile His Gly Val Gly His Ile Gly Leu Leu Met
 180 185 190
 Asn Ser Gln Val Asn Ser Leu Ile Lys Glu Gly Leu Asn Gly Gly Gly
 195 200 205
 Gln Asn Thr Asn
 210

<210> 56
 <211> 212
 <212> PRT
 <213> Bacillus subtilis

<400> 56
 Met Lys Phe Val Lys Arg Arg Ile Ile Ala Leu Val Thr Ile Leu Met
 1 5 10 15
 Leu Ser Val Thr Ser Leu Phe Ala Leu Gln Pro Ser Ala Lys Ala Ala
 20 25 30
 Glu His Asn Pro Val Val Met Val His Gly Ile Gly Gly Ala Ser Phe
 35 40 45
 Asn Phe Ala Gly Ile Lys Ser Tyr Leu Val Ser Gln Gly Trp Ser Arg
 50 55 60
 Asp Lys Leu Tyr Ala Val Asp Phe Trp Asp Lys Thr Gly Thr Asn Tyr
 65 70 75 80

Asn Asn Gly Pro Val Leu Pro Arg Phe Val Gln Lys Val Leu Asp Glu
 85 90 95
 Thr Gly Ala Lys Lys Val Asp Ile Val Ala His Ser Met Gly Gly Ala
 100 105 110
 Asn Thr Leu Tyr Tyr Ile Lys Asn Leu Asp Gly Gly Asn Lys Val Ala
 115 120 125
 Asn Val Val Thr Leu Gly Gly Ala Asn Arg Leu Thr Thr Gly Lys Ala
 130 135 140
 Leu Pro Gly Thr Asp Pro Asn Gln Lys Ile Leu Tyr Thr Ser Ile Tyr
 145 150 155 160
 Ser Ser Ala Asp Met Ile Val Ile Asn Tyr Leu Ser Arg Leu Asp Gly
 165 170 175
 Ala Arg Asn Val Gln Ile His Gly Val Gly His Ile Gly Leu Leu Tyr
 180 185 190
 Ser Ser Gln Val Asn Ser Leu Ile Lys Glu Gly Leu Asn Gly Gly Gly
 195 200 205
 Leu Asn Thr Asn
 210

<210> 57
 <211> 212
 <212> PRT
 <213> Bacillus megaterium

<400> 57
 Met Lys Phe Val Lys Arg Arg Ile Ile Ala Leu Val Thr Ile Leu Val
 1 5 10 15
 Leu Ser Val Thr Ser Leu Phe Ala Met Gln Pro Ser Ala Lys Ala Ala
 20 25 30
 Asp Thr Ile Gln Leu Leu Trp Phe Thr Gly Ile Gly Gly Ala Ser Tyr
 35 40 45
 Asn Phe Ala Gly Ile Lys Ser Tyr Leu Val Ser Gln Gly Trp Ser Arg
 50 55 60
 Gly Lys Leu Tyr Ala Val Asp Phe Trp Asp Lys Thr Gly Thr Asn Tyr
 65 70 75 80
 Asn Asn Gly Pro Val Leu Ser Arg Phe Val Gln Lys Val Leu Asp Glu
 85 90 95
 Thr Gly Ala Lys Lys Val Asp Ile Val Ala His Ser Met Gly Gly Ala
 100 105 110
 Asn Thr Leu Tyr Tyr Ile Lys Asn Leu Asp Gly Gly Asn Lys Ile Glu
 115 120 125
 Asn Val Val Thr Leu Gly Gly Ala Asn Arg Leu Thr Thr Ser Lys Ala
 130 135 140

Leu Pro Gly Thr Asp Pro Asn Gln Lys Ile Leu Tyr Thr Ser Ile Tyr
 145 150 155 160
 Ser Ser Ala Asp Met Ile Val Met Asn Tyr Leu Ser Lys Leu Asp Gly
 165 170 175
 Ala Lys Asn Val Gln Ile His Gly Val Gly His Ile Gly Leu Leu Met
 180 185 190
 Asn Ser Gln Val Asn Ser Leu Ile Lys Glu Gly Leu Asn Gly Gly Gly
 195 200 205
 His Asn Thr Asn
 210

<210> 58
 <211> 212
 <212> PRT
 <213> Bacillus lentus

<400> 58
 Met Lys Phe Val Lys Arg Arg Ile Ile Ala Leu Val Thr Ile Leu Val
 1 5 10 15
 Leu Ser Val Thr Ser Leu Phe Ala Met Gln Pro Ser Ala Lys Ala Ala
 20 25 30
 Glu His Asn Pro Val Val Met Val His Gly Ile Gly Gly Ala Ser Tyr
 35 40 45
 Asn Phe Ala Gly Ile Lys Ser Tyr Leu Val Ser Gln Gly Trp Ser Arg
 50 55 60
 Gly Lys Leu Tyr Ala Val Asp Phe Trp Asp Lys Thr Gly Thr Asn Tyr
 65 70 75 80
 Asn Asn Gly Pro Val Leu Ser Arg Phe Val Gln Lys Val Leu Asp Glu
 85 90 95
 Thr Gly Ala Lys Lys Val Asp Ile Val Ala His Ser Met Gly Gly Ala
 100 105 110
 Asn Thr Leu Tyr Tyr Ile Lys Asn Leu Asp Gly Gly Asn Lys Ile Glu
 115 120 125
 Asn Val Val Thr Leu Gly Gly Ala Asn Arg Leu Thr Thr Ser Lys Ala
 130 135 140
 Leu Pro Gly Thr Asp Pro Asn Gln Lys Ile Leu Tyr Thr Ser Ile Tyr
 145 150 155 160
 Ser Ser Ala Asp Met Ile Val Met Asn Tyr Leu Ser Lys Leu Asp Gly
 165 170 175
 Ala Lys Asn Val Gln Ile His Gly Val Gly His Ile Gly Leu Leu Met
 180 185 190
 Asn Ser Gln Val Asn Ser Leu Ile Lys Glu Gly Leu Asn Gly Gly Gly
 195 200 205

Leu Asn Thr Asn
210

<210> 59
<211> 212
<212> PRT
<213> Bacillus circulans

<400> 59
Met Lys Phe Ile Lys Arg Arg Ile Ile Ala Leu Val Thr Ile Leu Val
1 5 10 15
Leu Ser Val Thr Ser Leu Phe Ala Met Gln Pro Ser Ala Lys Ala Ala
20 25 30
Glu His Asn Pro Val Val Met Val His Gly Ile Gly Gly Ala Ser Tyr
35 40 45
Asn Phe Ala Gly Ile Lys Ser Tyr Leu Val Ser Gln Gly Trp Ser Arg
50 55 60
Gly Lys Leu Tyr Ala Val Asp Phe Trp Asp Lys Thr Gly Thr Asn Tyr
65 70 75 80
Asn Asn Gly Pro Val Leu Ser Arg Phe Val Gln Lys Val Leu Asp Glu
85 90 95
Thr Gly Ala Lys Lys Val Asp Ile Val Ala His Ser Met Gly Gly Ala
100 105 110
Asn Thr Leu Tyr Tyr Ile Lys Asn Leu Asp Gly Gly Asn Lys Ile Glu
115 120 125
Asn Val Val Thr Leu Gly Gly Ala Asn Arg Leu Thr Thr Ser Lys Ala
130 135 140
Leu Pro Gly Thr Asp Pro Asn Gln Lys Ile Leu Tyr Thr Ser Ile Tyr
145 150 155 160
Ser Ser Ala Asp Met Ile Val Met Asn Tyr Leu Ser Lys Leu Asp Gly
165 170 175
Ala Lys Asn Val Gln Ile His Gly Val Gly His Ile Gly Leu Leu Met
180 185 190
Asn Ser Gln Val Asn Ser Leu Ile Lys Glu Gly Leu Asn Gly Gly Gly
195 200 205
Leu Asn Thr Asn
210

<210> 60
<211> 212
<212> PRT
<213> Bacillus azotoformans

<400> 60
Met Lys Phe Val Lys Arg Arg Ile Ile Ala Leu Val Thr Ile Leu Val

1	5	10	15
Leu Ser Val	Thr Ser Leu	Phe Ala Met	Gln Pro Ser
20		25	30
Glu His Asn	Pro Val Val	Met Val His	Gly Ile Gly
35		40	45
Asn Phe Ala	Gly Ile Lys	Ser Tyr Leu	Val Ser Gln
50		55	60
Gly Glu Leu	Tyr Ala Val	Asp Phe Trp	Asp Lys Thr
65	70		75
Asn Asn Gly	Pro Val Leu	Ser Arg Phe	Val Gln Lys
	85		90
Thr Gly Ala	Lys Lys Val	Asp Ile Val	Ala His Ser
	100	105	
Asn Thr Leu	Tyr Tyr Ile	Lys Asn Leu	Asp Gly Gly
115		120	125
Asn Val Val	Thr Leu Gly	Gly Ala Asn	Arg Leu Thr
130		135	140
Leu Pro Gly	Thr Asp Pro	Asn Gln Lys	Ile Leu Tyr
145	150		155
Ser Ser Ala	Asn Met Ile	Val Met Asn	Tyr Leu Ser
	165		170
Ala Lys Asn	Val Gln Ile	His Gly Val	Gly His Ile
	180	185	190
Asn Ser Gln	Val Asn Ser	Leu Ile Lys	Glu Gly Leu
195		200	205
Leu Asp Thr	Asn		
210			

<210> 61

<211> 212

<212> PRT

<213> Bacillus firmus

<400> 61

Met Lys Phe	Val Lys Arg	Arg Ile Ile	Ala Leu Val	Thr Ile Leu	Val
1	5		10	15	
Leu Ser Val	Thr Ser Leu	Phe Ala Met	Gln Pro Ser	Ala Lys Ala	Ala
20		25		30	
Glu His Asn	Pro Val Val	Met Val His	Gly Ile Gly	Gly Ala Ser	Tyr
35		40		45	
Asn Phe Ala	Gly Ile Lys	Ser Tyr Leu	Val Ser Gln	Gly Trp Ser	Arg
50		55		60	
Gly Lys Leu	Tyr Ala Val	Asp Phe Trp	Asp Lys Thr	Gly Thr Asn	Tyr

65	70	75	80
Asn Asn Gly	Pro Val Leu Ser Arg Phe	Val Gln Lys	Val Leu Asp Glu
	85	90	95
Thr Gly Ala	Lys Lys Val Asp Ile Val	Ala His Ser	Met Gly Gly Ala
	100	105	110
Asn Thr Leu	Tyr Tyr Ile Lys Asn Leu	Asp Gly Gly	Asn Lys Ile Glu
	115	120	125
Asn Val Val	Thr Leu Gly Gly Ala Asn	Arg Leu Thr	Thr Ser Lys Ala
	130	135	140
Leu Pro Gly	Thr Asp Pro Asn Gln Lys	Ile Leu Tyr	Thr Ser Ile Tyr
	145	150	155
Ser Ser Ala	Asp Met Ile Val Met Asn	Tyr Leu Ser	Lys Leu Asp Gly
	165	170	175
Ala Lys Asn	Ala Gln Ile His Gly Val	Gly His Ile	Gly Leu Leu Met
	180	185	190
Asn Ser Gln	Val Asn Ser Leu Ile Lys	Glu Gly Leu	Asn Gly Gly Gly
	195	200	205
His Asn Thr	Asn		
	210		

<210> 62

<211> 212

<212> PRT

<213> Bacillus badius

<400> 62

Met Lys Phe	Val Lys Arg	Arg Ile Ile	Ala Leu Val	Thr Ile Leu Val
1	5		10	15
Leu Ser Val	Thr Ser Leu	Phe Ala Met	Gln Pro Ser	Ala Lys Ala Ala
	20	25		30
Glu His Asn	Pro Val Val	Met Val His	Gly Ile Gly	Gly Ala Ser Tyr
	35	40		45
Asn Phe Ala	Gly Ile Lys	Ser Tyr Leu	Val Ser Gln	Gly Trp Ser Arg
	50	55	60	
Gly Lys Leu	Tyr Ala Val	Asp Phe Trp	Asp Lys Thr	Gly Thr Asn Tyr
	65	70	75	80
Asn Asn Gly	Pro Val Leu	Ser Arg Phe	Val Gln Lys	Val Leu Asp Glu
	85		90	95
Thr Gly Ala	Lys Lys Val	Asp Ile Val	Ala His Ser	Met Gly Gly Ala
	100	105		110
Asn Thr Leu	Tyr Tyr Ile	Lys Asn Leu	Asp Gly Gly	Asn Lys Ile Glu
	115	120	125	
Asn Val Val	Thr Leu Gly	Gly Ala Asn	Arg Leu Thr	Thr Ser Lys Ala

130 135 140
 Leu Pro Gly Thr Asp Pro Asn Gln Lys Ile Leu Tyr Thr Ser Ile Tyr
 145 150 155 160
 Ser Ser Ala Asp Met Ile Val Met Asn Tyr Leu Ser Lys Leu Asp Gly
 165 170 175
 Ala Lys Asn Val Gln Ile His Gly Val Gly His Ile Gly Leu Leu Met
 180 185 190
 Asn Ser Gln Val Asn Ser Leu Ile Lys Glu Gly Leu Asn Gly Gly Gly
 195 200 205
 His Asn Thr Asn
 210

<210> 63
 <211> 212
 <212> PRT
 <213> Bacillus sp.

<400> 63
 Met Lys Phe Val Lys Arg Arg Ile Ile Ala Leu Val Thr Ile Leu Met
 1 5 10 15
 Leu Ser Val Thr Ser Leu Phe Ala Leu Gln Pro Ser Ala Lys Ala Ala
 20 25 30
 Glu His Asn Pro Val Val Met Val His Gly Ile Gly Gly Ala Ser Phe
 35 40 45
 Asn Phe Ala Gly Ile Lys Ser Tyr Leu Val Ser Gln Gly Trp Ser Arg
 50 55 60
 Asp Lys Leu Tyr Ala Val Asp Phe Lys Asp Lys Thr Gly Thr Asn Tyr
 65 70 75 80
 Asn Asn Gly Pro Val Leu Ser Arg Phe Val Gln Lys Val Leu Asp Glu
 85 90 95
 Thr Gly Ala Lys Lys Val Asp Ile Val Ala His Ser Met Gly Gly Ala
 100 105 110
 Asn Thr Leu Tyr Tyr Ile Lys Asn Leu Asp Gly Gly Asn Lys Val Glu
 115 120 125
 Asn Val Val Thr Leu Gly Gly Ala Asn Arg Leu Thr Thr Gly Lys Ala
 130 135 140
 Leu Pro Gly Thr Asp Pro Asn Gln Lys Ile Leu Tyr Thr Ser Ile Tyr
 145 150 155 160
 Ser Ser Ala Asp Met Ile Val Met Asn Tyr Leu Ser Arg Leu Asp Gly
 165 170 175
 Ala Arg Asn Val Gln Ile His Gly Val Gly His Ile Gly Leu Leu Tyr
 180 185 190
 Ser Ser Gln Val Asn Ser Leu Ile Lys Glu Gly Leu Asn Gly Gly Gly

195	200	205
Leu Asn Thr Asn		
210		
<210> 64		
<211> 212		
<212> PRT		
<213> Bacillus sp.		
<220>		
<221> MOD_RES		
<222> (73)		
<223> Variable amino acid		
<400> 64		
Met Lys Phe Val Lys Arg Arg Ile Ile Ala Leu Val Thr Ile Leu Met		
1 5 10 15		
Leu Ser Val Thr Ser Leu Phe Ala Leu Gln Pro Ser Ala Lys Ala Ala		
20 25 30		
Glu His Asn Pro Val Val Met Val His Gly Ile Gly Gly Ala Ser Phe		
35 40 45		
Asn Phe Ala Gly Ile Lys Ser Tyr Leu Val Ser Gln Gly Trp Ser Arg		
50 55 60		
Asp Lys Leu Tyr Ala Val Asp Phe Xaa Asp Lys Thr Gly Asn Asn Arg		
65 70 75 80		
Asn Asn Gly Pro Arg Leu Ser Arg Phe Val Lys Asp Val Leu Asp Lys		
85 90 95		
Thr Gly Ala Lys Lys Val Asp Ile Val Ala His Ser Met Gly Gly Ala		
100 105 110		
Asn Thr Leu Tyr Tyr Ile Lys Asn Leu Asp Gly Gly Asp Lys Ile Glu		
115 120 125		
Asn Val Val Thr Ile Gly Gly Ala Asn Gly Leu Val Ser Ser Arg Ala		
130 135 140		
Leu Pro Gly Thr Asp Pro Asn Gln Lys Ile Leu Tyr Thr Ser Val Tyr		
145 150 155 160		
Ser Ser Ala Asp Leu Ile Val Val Asn Ser Leu Ser Arg Leu Ile Gly		
165 170 175		
Ala Arg Asn Ile Leu Ile His Gly Val Gly His Ile Gly Leu Leu Thr		
180 185 190		
Ser Ser Gln Val Lys Gly Tyr Ile Lys Glu Gly Leu Asn Gly Gly Gly		
195 200 205		
Leu Asn Thr Asn		
210		
<210> 65		

<211> 215
 <212> PRT
 <213> Bacillus sp.

<400> 65

Met	Lys	Val	Ile	Phe	Val	Lys	Lys	Arg	Ser	Leu	Gln	Ile	Leu	Val	Ala
1				5					10					15	
Leu	Ala	Leu	Val	Leu	Gly	Ser	Ile	Ala	Phe	Ile	Gln	Pro	Lys	Glu	Ala
			20					25					30		
Lys	Ala	Ala	Glu	His	Asn	Pro	Val	Val	Met	Val	His	Gly	Met	Gly	Gly
		35						40				45			
Ala	Ser	Tyr	Asn	Phe	Ala	Ser	Ile	Lys	Arg	Tyr	Leu	Val	Ser	Gln	Gly
	50					55					60				
Trp	Asp	Gln	Asn	Gln	Leu	Phe	Ala	Ile	Asp	Phe	Ile	Asp	Lys	Thr	Gly
65					70					75					80
Asn	Asn	Leu	Asn	Asn	Gly	Pro	Arg	Leu	Ser	Arg	Phe	Val	Lys	Asp	Val
				85					90					95	
Leu	Ala	Lys	Thr	Gly	Ala	Lys	Lys	Val	Asp	Ile	Val	Ala	His	Ser	Met
			100					105					110		
Gly	Gly	Ala	Asn	Thr	Leu	Tyr	Tyr	Ile	Lys	Asn	Leu	Asp	Gly	Gly	Asp
		115					120					125			
Lys	Ile	Glu	Asn	Val	Val	Thr	Leu	Gly	Gly	Ala	Asn	Gly	Leu	Val	Ser
	130						135				140				
Leu	Arg	Ala	Leu	Pro	Gly	Thr	Asp	Pro	Asn	Gln	Lys	Ile	Leu	Tyr	Thr
145					150					155					160
Ser	Val	Tyr	Ser	Ser	Ala	Asp	Leu	Ile	Val	Val	Asn	Ser	Leu	Ser	Arg
				165					170					175	
Leu	Ile	Gly	Ala	Arg	Asn	Val	Leu	Ile	His	Gly	Val	Gly	His	Ile	Gly
			180					185					190		
Leu	Leu	Thr	Ser	Ser	Gln	Val	Lys	Gly	Tyr	Val	Lys	Glu	Gly	Leu	Asn
	195						200					205			
Gly	Gly	Gly	Gln	Asn	Thr	Asn									
	210					215									

<210> 66
 <211> 215
 <212> PRT
 <213> Bacillus sp.

<400> 66

Met	Lys	Val	Ile	Phe	Val	Lys	Lys	Arg	Ser	Leu	Gln	Ile	Leu	Val	Val
1				5					10					15	
Leu	Ala	Leu	Val	Met	Gly	Ser	Met	Ala	Phe	Ile	Gln	Pro	Lys	Glu	Ile
			20					25					30		
Arg	Ala	Ala	Glu	His	Asn	Pro	Val	Val	Met	Val	His	Gly	Met	Gly	Gly

35					40					45					
Ala	Ser	Tyr	Asn	Phe	Ala	Ser	Ile	Lys	Ser	Tyr	Leu	Val	Ser	Gln	Gly
50					55					60					
Trp	Asp	Arg	Asn	Gln	Leu	Phe	Ala	Ile	Asp	Phe	Ile	Asp	Lys	Thr	Gly
65					70					75					80
Asn	Asn	Arg	Asn	Asn	Gly	Pro	Arg	Leu	Ser	Arg	Phe	Val	Lys	Asp	Val
				85					90					95	
Leu	Ala	Lys	Thr	Gly	Ala	Lys	Lys	Val	Asp	Ile	Val	Ala	His	Ser	Met
			100					105					110		
Gly	Gly	Ala	Asn	Thr	Leu	Tyr	Tyr	Ile	Lys	Asn	Leu	Asp	Gly	Gly	Asp
		115					120					125			
Lys	Ile	Glu	Asn	Val	Val	Thr	Leu	Gly	Gly	Ala	Asn	Gly	Leu	Val	Ser
	130					135					140				
Leu	Arg	Ala	Leu	Pro	Gly	Thr	Asp	Pro	Asn	Gln	Lys	Ile	Leu	Tyr	Thr
145					150					155					160
Ser	Val	Tyr	Ser	Ser	Ala	Asp	Leu	Ile	Val	Val	Asn	Ser	Leu	Ser	Arg
				165					170					175	
Leu	Ile	Gly	Ala	Arg	Asn	Val	Leu	Ile	His	Gly	Val	Gly	His	Ile	Gly
			180					185					190		
Leu	Leu	Ala	Ser	Ser	Gln	Val	Lys	Gly	Tyr	Ile	Lys	Glu	Gly	Leu	Asn
		195					200					205			
Gly	Gly	Gly	Gln	Asn	Thr	Asn									
	210				215										

<210> 67

<211> 215

<212> PRT

<213> Bacillus sp.

<400> 67

Met	Lys	Val	Ile	Phe	Val	Lys	Lys	Arg	Ser	Leu	Gln	Ile	Leu	Ile	Ala
1				5					10					15	
Leu	Ala	Leu	Val	Ile	Gly	Ser	Met	Ala	Phe	Ile	Gln	Pro	Lys	Glu	Ala
			20					25					30		
Lys	Ala	Ala	Glu	His	Asn	Pro	Val	Val	Met	Val	His	Gly	Ile	Gly	Gly
		35					40					45			
Ala	Ser	Tyr	Asn	Phe	Phe	Ser	Ile	Lys	Ser	Tyr	Leu	Ala	Thr	Gln	Gly
	50				55					60					
Trp	Asp	Arg	Asn	Gln	Leu	Tyr	Ala	Ile	Asp	Phe	Ile	Asp	Lys	Thr	Gly
65					70					75					80
Asn	Asn	Arg	Asn	Asn	Gly	Pro	Arg	Leu	Ser	Arg	Phe	Val	Lys	Asp	Val
				85					90					95	
Leu	Asp	Lys	Thr	Gly	Ala	Lys	Lys	Val	Asp	Ile	Val	Ala	His	Ser	Met

100	105	110
Gly Gly Ala Asn Thr Leu Tyr Tyr Ile Lys Asn Leu Asp Gly Gly Asp 115 120 125		
Lys Ile Glu Asn Val Val Thr Ile Gly Gly Ala Asn Gly Leu Val Ser 130 135 140		
Ser Arg Ala Leu Pro Gly Thr Asp Pro Asn Gln Lys Ile Leu Tyr Thr 145 150 155 160		
Ser Val Tyr Ser Ser Ala Asp Leu Ile Val Val Asn Ser Leu Ser Gln 165 170 175		
Phe Asn Trp Arg Lys Lys His Pro Asp Pro Gly Val Gly His Ile Gly 180 185 190		
Leu Leu Thr Ser Ser Gln Val Lys Gly Tyr Ile Lys Glu Gly Leu Asn 195 200 205		
Gly Gly Gly Leu Asn Thr Asn 210 215		

<210> 68
 <211> 212
 <212> PRT
 <213> Bacillus sp.

<400> 68
Met Lys Phe Val Lys Arg Arg Ile Ile Ala Leu Val Thr Ile Leu Met 1 5 10 15
Leu Ser Val Thr Ser Leu Phe Ala Leu Gln Pro Ser Ala Lys Ala Ala 20 25 30
Glu His Asn Pro Val Val Met Val His Gly Ile Gly Gly Ala Ser Phe 35 40 45
Asn Phe Ala Gly Ile Lys Ser Tyr Leu Val Ser Gln Gly Trp Ser Arg 50 55 60
Asp Lys Leu Tyr Ala Val Asp Phe Arg Asp Lys Thr Gly Asn Asn Leu 65 70 75 80
Asn Asn Gly Pro Val Leu Ser Arg Phe Val Lys Lys Val Leu Asp Glu 85 90 95
Thr Gly Ala Lys Lys Val Asp Ile Val Ala His Ser Met Gly Gly Ala 100 105 110
Asn Thr Leu Tyr Tyr Ile Lys Asn Leu Asp Gly Gly Asn Lys Ile Glu 115 120 125
Asn Val Val Thr Leu Gly Gly Ala Asn Arg Leu Val Thr Gly Lys Ala 130 135 140
Leu Pro Gly Thr Asp Pro Asn Gln Lys Ile Leu Tyr Thr Ser Val Tyr 145 150 155 160
Ser Ser Ala Asp Met Ile Val Met Asn Tyr Leu Thr Lys Leu Asp Gly

	165		170		175
Ala Lys Asn Val Gln Ile His Gly Val Gly His Ile Gly Leu Leu Tyr	180	185	190		
Ser Ser Gln Val Asn Ser Leu Ile Lys Glu Gly Leu Asn Gly Gly Gly	195	200	205		
Leu Asn Thr Asn	210				
<210> 69					
<211> 212					
<212> PRT					
<213> Bacillus sp.					
<400> 69					
Met Lys Phe Val Lys Arg Arg Ile Ile Ala Leu Val Thr Ile Leu Met	1	5	10	15	
Leu Ser Val Thr Ser Leu Phe Ala Leu Gln Pro Ser Ala Lys Ala Ala	20	25	30		
Glu His Asn Pro Val Val Met Val His Gly Ile Gly Gly Ala Ser Phe	35	40	45		
Asn Phe Ala Gly Ile Lys Ser Tyr Leu Val Ser Gln Gly Trp Ser Arg	50	55	60		
Asp Lys Leu Tyr Ala Val Asp Phe Trp Asp Lys Thr Gly Asn Asn Leu	65	70	75	80	
Asn Asn Gly Pro Val Leu Ser Arg Phe Val Lys Lys Val Leu Asp Glu	85	90	95		
Thr Gly Ala Lys Lys Val Asp Ile Val Ala His Ser Met Gly Gly Ala	100	105	110		
Asn Thr Leu Tyr Tyr Ile Lys Asn Leu Asp Gly Gly Asn Lys Ile Glu	115	120	125		
Asn Val Val Thr Leu Gly Gly Ala Asn Arg Leu Val Thr Gly Lys Ala	130	135	140		
Leu Pro Gly Thr Asp Pro Asn Gln Lys Ile Leu Tyr Thr Ser Val Tyr	145	150	155	160	
Ser Ser Ala Asp Met Ile Val Met Asn Tyr Leu Ser Lys Leu Asp Gly	165	170	175		
Ala Lys Asn Val Gln Ile His Gly Val Gly His Ile Gly Leu Leu Tyr	180	185	190		
Ser Ser Gln Val Asn Ser Leu Ile Lys Glu Gly Leu Asn Gly Gly Gly	195	200	205		
Leu Asn Thr Asn	210				

<210> 70
 <211> 212
 <212> PRT
 <213> Bacillus sp.

<400> 70
 Met Lys Phe Val Lys Arg Arg Ile Ile Ala Leu Val Thr Ile Leu Met
 1 5 10 15
 Leu Ser Val Thr Ser Leu Phe Ala Leu Gln Pro Ser Ala Lys Ala Ala
 20 25 30
 Glu His Asn Pro Val Val Met Val His Gly Ile Gly Gly Ala Ser Phe
 35 40 45
 Asn Phe Ala Gly Ile Lys Ser Tyr Leu Val Ser Gln Gly Trp Ser Arg
 50 55 60
 Asp Lys Leu Tyr Ala Val Asp Phe Ser Asp Lys Thr Gly Asn Asn Leu
 65 70 75 80
 Asn Asn Gly Pro Val Leu Ser Arg Phe Val Lys Lys Val Leu Asp Glu
 85 90 95
 Thr Gly Ala Lys Lys Val Asp Ile Val Ala His Ser Met Gly Gly Ala
 100 105 110
 Asn Thr Leu Tyr Tyr Ile Lys Asn Leu Asp Gly Gly Asn Lys Ile Glu
 115 120 125
 Asn Val Val Thr Leu Gly Gly Ala Asn Arg Leu Val Thr Gly Lys Ala
 130 135 140
 Leu Pro Gly Thr Asp Pro Asn Gln Lys Ile Leu Tyr Thr Ser Val Tyr
 145 150 155 160
 Ser Ser Ala Asp Met Ile Val Met Asn Tyr Leu Ser Lys Leu Asp Gly
 165 170 175
 Ala Lys Asn Val Gln Ile His Gly Val Gly His Ile Gly Leu Leu Tyr
 180 185 190
 Ser Ser Gln Val Asn Ser Leu Ile Lys Glu Gly Leu Asn Gly Gly Gly
 195 200 205
 Leu Asn Thr Asn
 210

<210> 71
 <211> 212
 <212> PRT
 <213> Bacillus sp.

<400> 71
 Met Lys Phe Val Lys Arg Arg Ile Ile Ala Leu Val Thr Ile Leu Met
 1 5 10 15
 Leu Ser Val Thr Ser Leu Phe Ala Leu Gln Pro Ser Ala Lys Ala Ala
 20 25 30

Glu His Asn Pro Val Val Met Val His Gly Ile Gly Gly Ala Ser Phe
 35 40 45
 Asn Phe Ala Gly Ile Lys Ser Tyr Leu Val Ser Gln Gly Trp Ser Arg
 50 55 60
 Asp Lys Leu Tyr Ala Val Asp Phe Lys Asp Lys Thr Gly Asn Asn Arg
 65 70 75 80
 Asn Asn Gly Pro Arg Leu Ser Arg Phe Val Lys Asp Val Leu Asp Lys
 85 90 95
 Thr Gly Ala Lys Lys Val Asp Ile Val Ala His Ser Met Gly Gly Ala
 100 105 110
 Asn Thr Leu Tyr Tyr Ile Lys Asn Leu Asp Gly Gly Asp Lys Ile Glu
 115 120 125
 Asn Val Val Thr Ile Gly Gly Ala Asn Gly Leu Val Ser Ser Arg Ala
 130 135 140
 Leu Pro Gly Thr Asp Pro Asn Gln Lys Ile Leu Tyr Thr Ser Val Tyr
 145 150 155 160
 Ser Ser Ala Asp Leu Ile Val Val Asn Ser Leu Ser Arg Leu Ile Gly
 165 170 175
 Ala Arg Asn Val Gln Ile His Gly Val Gly His Ile Gly Leu Leu Thr
 180 185 190
 Ser Ser Gln Val Lys Gly Tyr Ile Lys Glu Gly Leu Asn Gly Gly Gly
 195 200 205
 Leu Asn Thr Asn
 210

<210> 72
 <211> 212
 <212> PRT
 <213> Bacillus sp.

<400> 72
 Met Lys Phe Val Lys Arg Arg Ile Leu Ala Leu Val Thr Ile Leu Met
 1 5 10 15
 Leu Ser Val Thr Ser Leu Phe Ala Leu Gln Pro Ser Ala Lys Ala Ala
 20 25 30
 Glu His Asn Pro Val Val Met Val His Gly Ile Gly Gly Ala Ser Phe
 35 40 45
 Asn Phe Ala Gly Ile Lys Ser Tyr Leu Val Ser Gln Gly Trp Ser Arg
 50 55 60
 Asp Lys Leu Tyr Ala Val Asp Phe Ile Asp Lys Thr Gly Asn Asn Arg
 65 70 75 80
 Asn Asn Gly Pro Arg Leu Ser Arg Phe Val Lys Asp Val Leu Asp Lys
 85 90 95

Thr Gly Ala Lys Lys Val Asp Ile Val Ala His Ser Met Gly Gly Ala
 100 105 110
 Asn Thr Leu Tyr Tyr Ile Lys Asn Leu Asp Gly Gly Asp Lys Ile Glu
 115 120 125
 Asn Val Val Thr Ile Gly Gly Ala Asn Gly Leu Val Ser Ser Arg Ala
 130 135 140
 Leu Pro Gly Thr Asp Pro Asn Gln Lys Ile Leu Tyr Thr Ser Val Tyr
 145 150 155 160
 Ser Ser Ala Asp Leu Ile Val Val Asn Ser Leu Ser Arg Leu Ile Gly
 165 170 175
 Ala Arg Asn Val Gln Ile His Gly Val Gly His Ile Gly Leu Leu Thr
 180 185 190
 Ser Ser Leu Val Lys Gly Tyr Ile Lys Glu Gly Leu Asn Gly Gly Gly
 195 200 205
 Gln Asn Thr Asn
 210

<210> 73
 <211> 215
 <212> PRT
 <213> Bacillus sp.

<400> 73
 Met Lys Val Ile Phe Val Lys Lys Arg Ser Leu Gln Ile Leu Val Ala
 1 5 10 15
 Leu Ala Leu Val Ile Gly Ser Met Ala Phe Ile Gln Pro Lys Glu Ile
 20 25 30
 Lys Ala Ala Glu His Asn Pro Val Val Met Val His Gly Ile Gly Gly
 35 40 45
 Ala Ser Tyr Asn Phe Ala Ser Ile Lys Ser Tyr Leu Val Asn Gln Gly
 50 55 60
 Trp Asp Arg Asn Gln Leu Phe Ala Ile Asp Phe Ile Asp Lys Thr Gly
 65 70 75 80
 Asn Asn Arg Asn Asn Gly Pro Arg Leu Ser Arg Phe Val Lys Asp Val
 85 90 95
 Leu Asp Lys Thr Gly Ala Lys Lys Val Asp Ile Val Ala His Ser Met
 100 105 110
 Gly Gly Ala Asn Thr Leu Tyr Tyr Ile Lys Asn Leu Asp Gly Gly Asp
 115 120 125
 Lys Ile Glu Asn Val Val Thr Ile Gly Gly Ala Asn Gly Leu Val Ser
 130 135 140
 Leu Arg Ala Leu Pro Gly Thr Asp Pro Asn Gln Lys Ile Leu Tyr Thr
 145 150 155 160

Ser Val Tyr Ser Ser Ala Asp Leu Ile Val Val Asn Ser Leu Ser Arg
165 170 175

Leu Thr Gly Ala Arg Asn Val Leu Ile His Gly Val Gly His Ile Gly
180 185 190

Leu Leu Thr Ser Ser Gln Val Lys Gly Tyr Ile Lys Glu Gly Leu Asn
195 200 205

Gly Gly Gly Leu Asn Thr Asn
210 215

<210> 74
<211> 213
<212> PRT
<213> Bacillus sp.

<400> 74
Met Lys Phe Val Lys Arg Arg Ile Ile Ala Leu Val Thr Ile Leu Met
1 5 10 15

Leu Ser Val Thr Ser Leu Phe Ala Leu Gln Pro Ser Ala Lys Ala Ala
20 25 30

Glu His Asn Pro Val Val Met Val His Gly Ile Gly Gly Ala Ser Phe
35 40 45

Asn Phe Ala Gly Ile Lys Ser Tyr Leu Val Ser Gln Gly Trp Ser Arg
50 55 60

Asp Lys Leu Tyr Ala Val Asp Phe Arg Asp Lys Thr Gly Asn Asn Arg
65 70 75 80

Asn Asn Gly Pro Arg Leu Ser Lys Phe Val Lys Asp Val Leu Asp Lys
85 90 95

Thr Gly Ala Lys Lys Val Asp Ile Val Ala His Ser Met Gly Gly Ala
100 105 110

Asn Thr Leu Tyr Tyr Ile Lys Asn Leu Asp Gly Gly Asp Lys Ile Glu
115 120 125

Asn Val Val Thr Ile Gly Gly Ala Asn Gly Leu Val Ser Ser Arg Ala
130 135 140

Leu Pro Gly Thr Asp Pro Asn Gln Lys Ile Leu Tyr Thr Ser Val Tyr
145 150 155 160

Lys Leu Ser Arg Ser His Cys Arg Gln Gln Ser Leu Ser Phe Asn Trp
165 170 175

Leu Gln Glu Thr Val Gln Ile His Gly Val Gly His Ile Gly Leu Leu
180 185 190

Thr Ser Ser Gln Val Lys Gly Tyr Ile Lys Glu Gly Leu Asn Gly Gly
195 200 205

Gly Leu Asn Thr Asn
210

<210> 75
 <211> 180
 <212> PRT
 <213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic peptide

<400> 75

Glu	His	Asn	Pro	Val	Val	Met	Val	His	Gly	Ile	Gly	Gly	Ala	Ser	Phe	1	5	10	15
Asn	Phe	Ala	Gly	Ile	Lys	Ser	Tyr	Leu	Val	Ser	Gln	Gly	Trp	Ser	Arg	20	25	30	
Gly	Lys	Leu	Tyr	Ala	Val	Asp	Phe	Trp	Asp	Lys	Thr	Gly	Thr	Asn	Tyr	35	40	45	
Asn	Asn	Gly	Pro	Val	Leu	Ser	Arg	Phe	Val	Lys	Lys	Val	Leu	Asp	Glu	50	55	60	
Thr	Gly	Ala	Lys	Lys	Val	Asp	Ile	Val	Ala	His	Ser	Met	Gly	Gly	Ala	65	70	75	80
Asn	Thr	Leu	Tyr	Tyr	Ile	Lys	Asn	Leu	Asp	Gly	Gly	Asn	Lys	Val	Glu	85	90	95	
Asn	Val	Val	Thr	Leu	Gly	Gly	Thr	Asn	Arg	Ser	Thr	Thr	Ser	Lys	Ala	100	105	110	
Leu	Pro	Gly	Thr	Asp	Pro	Asn	Gln	Lys	Ile	Leu	Tyr	Thr	Ser	Ile	Tyr	115	120	125	
Ser	Ser	Ala	Asp	Met	Ile	Val	Met	Asn	Tyr	Leu	Ser	Lys	Leu	Asp	Gly	130	135	140	
Ala	Lys	Asn	Val	Gln	Ile	His	Gly	Val	Gly	His	Ile	Gly	Leu	Leu	Met	145	150	155	160
Asn	Ser	Gln	Val	Asn	Ser	Leu	Ile	Lys	Glu	Gly	Leu	Asn	Gly	Gly	Gly	165	170	175	
Leu	Asn	Thr	Asn													180			

<210> 76
 <211> 180
 <212> PRT
 <213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic peptide

<400> 76

Glu	His	Asn	Pro	Val	Val	Met	Val	His	Gly	Ile	Gly	Gly	Ala	Ser	Phe	1	5	10	15
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	---	---	----	----

Asn	Phe	Ala	Gly	Ile	Lys	Ser	Tyr	Leu	Val	Ser	Gln	Gly	Trp	Ser	Arg			
			20					25					30					
Gly	Lys	Leu	Tyr	Ala	Val	Asp	Phe	Trp	Asp	Lys	Thr	Gly	Thr	Asn	Tyr			
		35					40					45						
Asn	Asn	Gly	Pro	Val	Leu	Ser	Arg	Phe	Val	Lys	Asp	Val	Leu	Asp	Lys			
		50					55				60							
Thr	Gly	Ala	Lys	Lys	Val	Asp	Ile	Val	Ala	His	Ser	Met	Gly	Gly	Ala			
	65				70					75					80			
Asn	Thr	Leu	Tyr	Tyr	Ile	Lys	Asn	Leu	Asp	Gly	Gly	Asn	Lys	Ile	Glu			
			85						90					95				
Asn	Val	Val	Thr	Leu	Gly	Gly	Ala	Asn	Arg	Ser	Thr	Thr	Ser	Lys	Ala			
			100					105					110					
Leu	Pro	Gly	Thr	Asp	Pro	Asn	Gln	Lys	Ile	Leu	Tyr	Thr	Ser	Ile	Tyr			
		115					120					125						
Ser	Ser	Ala	Asp	Met	Ile	Val	Met	Asn	Tyr	Leu	Ser	Lys	Leu	Asp	Gly			
	130						135				140							
Ala	Lys	Asn	Val	Gln	Ile	His	Gly	Val	Gly	His	Ile	Gly	Leu	Leu	Met			
	145				150					155					160			
Asn	Ser	Gln	Val	Asn	Ser	Leu	Ile	Lys	Glu	Gly	Leu	Asn	Gly	Gly	Gly			
			165						170					175				
Leu	Asn	Thr	Asn															
			180															

<210> 77

<211> 180

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic peptide

<400> 77

Glu	His	Asn	Pro	Val	Val	Met	Val	His	Gly	Ile	Gly	Gly	Ala	Ser	Phe			
	1			5					10					15				
Asn	Phe	Ala	Gly	Ile	Lys	Ser	Tyr	Leu	Val	Ser	Gln	Gly	Trp	Ser	Arg			
		20						25					30					
Gly	Lys	Leu	Tyr	Ala	Val	Asp	Phe	Trp	Asp	Arg	Thr	Gly	Thr	Asn	Tyr			
		35					40					45						
Asn	Asn	Gly	Pro	Val	Leu	Ser	Arg	Phe	Val	Lys	Lys	Val	Leu	Asp	Glu			
		50					55				60							
Thr	Gly	Ala	Lys	Lys	Val	Asp	Ile	Val	Ala	His	Ser	Met	Gly	Gly	Ala			
	65				70					75					80			
Asn	Thr	Leu	Tyr	Tyr	Ile	Lys	Asn	Leu	Asp	Gly	Gly	Asn	Lys	Ile	Glu			
			85						90					95				

Asn	Val	Val	Thr	Leu	Gly	Gly	Ala	Asn	Arg	Leu	Thr	Thr	Ser	Lys	Ala
			100					105					110		
Leu	Pro	Gly	Thr	Asp	Pro	Asn	Gln	Lys	Ile	Leu	Tyr	Thr	Ser	Ile	Tyr
		115					120					125			
Gly	Ser	Ala	Asp	Met	Ile	Val	Met	Asn	Tyr	Leu	Ser	Lys	Leu	Asp	Gly
		130					135				140				
Ala	Lys	Asn	Val	Gln	Ile	His	Gly	Val	Gly	His	Ile	Gly	Leu	Leu	Met
145					150					155					160
Asn	Ser	Gln	Val	Asn	Ser	Leu	Ile	Lys	Glu	Gly	Leu	Asn	Gly	Gly	Gly
			165						170					175	
Leu	Asn	Thr	Asn												
			180												

<210> 78

<211> 180

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic peptide

<400> 78

Glu	His	Asn	Pro	Val	Val	Met	Val	His	Gly	Ile	Gly	Gly	Ala	Ser	Phe
1				5					10					15	
Asn	Phe	Ala	Gly	Ile	Lys	Ser	Tyr	Leu	Val	Ser	Gln	Gly	Trp	Ser	Arg
		20						25					30		
Gly	Lys	Leu	Tyr	Ala	Val	Asp	Phe	Trp	Asp	Lys	Thr	Gly	Thr	Asn	Tyr
		35					40					45			
Asn	Asn	Gly	Pro	Val	Leu	Ser	Arg	Phe	Val	Gln	Lys	Val	Leu	Asp	Glu
		50					55				60				
Thr	Gly	Ala	Lys	Lys	Val	Asp	Ile	Val	Ala	His	Ser	Met	Gly	Gly	Ala
65					70					75					80
Asn	Thr	Leu	Tyr	Tyr	Ile	Lys	Asn	Leu	Asp	Gly	Gly	Asn	Lys	Ile	Glu
				85					90					95	
Asn	Val	Val	Thr	Leu	Gly	Gly	Ala	Asn	Arg	Ser	Thr	Thr	Ser	Lys	Ala
			100					105					110		
Leu	Pro	Gly	Thr	Asp	Pro	Asn	Gln	Lys	Ile	Leu	Tyr	Thr	Ser	Ile	Tyr
		115					120					125			
Gly	Ser	Ala	Asp	Met	Ile	Val	Met	Asn	Tyr	Leu	Ser	Lys	Leu	Asp	Gly
		130					135				140				
Ala	Lys	Asn	Val	Gln	Ile	His	Gly	Val	Gly	His	Ile	Gly	Leu	Leu	Met
145					150					155					160
Asn	Ser	Gln	Val	Asn	Ser	Leu	Ile	Lys	Glu	Gly	Leu	Asn	Gly	Gly	Gly

165

170

175

Leu Asn Thr Asn
180

<210> 79
<211> 180
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 79
Glu His Asn Pro Val Val Met Val His Gly Ile Gly Gly Ala Ser Phe
1 5 10 15
Asn Phe Ala Gly Ile Lys Ser Tyr Leu Val Ser Gln Gly Trp Ser Arg
20 25 30
Gly Lys Leu Tyr Ala Val Asp Phe Trp Asp Lys Thr Gly Thr Asn Tyr
35 40 45
Asn Asn Gly Pro Val Leu Ser Arg Phe Val Gln Lys Val Leu Asp Glu
50 55 60
Thr Gly Ala Lys Lys Val Asp Ile Val Ala His Ser Met Gly Gly Ala
65 70 75 80
Asn Thr Leu Tyr Tyr Ile Lys Asn Leu Asp Gly Gly Asn Lys Ile Glu
85 90 95
Asn Val Val Thr Ile Gly Gly Ala Asn Gly Leu Val Ser Ser Arg Ala
100 105 110
Leu Pro Gly Thr Asp Pro Asn Gln Lys Ile Leu Tyr Thr Ser Val Tyr
115 120 125
Ser Ser Ala Asp Leu Ile Val Val Asn Ser Leu Ser Arg Leu Ile Gly
130 135 140
Ala Arg Asn Val Gln Ile His Gly Val Gly His Ile Gly Leu Leu Thr
145 150 155 160
Ser Ser Gln Val Lys Gly Tyr Ile Lys Glu Gly Leu Asn Gly Gly Gly
165 170 175
His Asn Thr Asn
180

<210> 80
<211> 180
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 80

Glu	His	Asn	Pro	Val	Val	Met	Val	His	Gly	Ile	Gly	Gly	Ala	Ser	Tyr	
1				5					10					15		
Asn	Phe	Ala	Gly	Ile	Lys	Ser	Tyr	Leu	Val	Ser	Gln	Gly	Trp	Ser	Arg	
		20						25					30			
Gly	Lys	Leu	Tyr	Ala	Val	Asp	Phe	Trp	Asp	Lys	Thr	Gly	Thr	Asn	Tyr	
		35					40					45				
Asn	Asn	Gly	Pro	Val	Leu	Ser	Arg	Phe	Val	Gln	Lys	Val	Leu	Asp	Glu	
	50					55					60					
Thr	Gly	Ala	Lys	Lys	Val	Asp	Ile	Val	Ala	His	Ser	Met	Gly	Gly	Ala	
65					70					75					80	
Asn	Thr	Leu	Tyr	Tyr	Ile	Lys	Asn	Leu	Asp	Gly	Gly	Asn	Lys	Ile	Glu	
			85						90					95		
Asn	Val	Val	Thr	Leu	Gly	Gly	Ala	Asn	Arg	Leu	Thr	Thr	Ser	Arg	Ala	
			100					105						110		
Leu	Pro	Gly	Thr	Asp	Pro	Asn	Gln	Lys	Ile	Leu	Tyr	Thr	Ser	Ile	Tyr	
		115					120					125				
Ser	Ser	Ala	Asp	Met	Ile	Val	Met	Asn	Tyr	Leu	Ser	Lys	Leu	Asp	Gly	
	130						135				140					
Ala	Lys	Asn	Val	Gln	Ile	His	Gly	Val	Gly	His	Ile	Gly	Leu	Leu	Met	
145					150					155					160	
Asn	Ser	Gln	Val	Lys	Gly	Tyr	Ile	Lys	Glu	Gly	Leu	Asn	Gly	Gly	Gly	
			165						170					175		
Leu	Asn	Thr	Asn													
			180													

<210> 81

<211> 180

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic peptide

<400> 81

Glu	His	Asn	Pro	Val	Val	Met	Val	His	Gly	Ile	Gly	Gly	Ala	Ser	Phe	
1				5					10					15		
Ser	Phe	Ala	Gly	Ile	Lys	Ser	Tyr	Leu	Val	Ser	Gln	Gly	Trp	Ser	Arg	
		20						25					30			
Gly	Lys	Leu	Tyr	Pro	Val	Asp	Phe	Trp	Asp	Lys	Thr	Gly	Thr	Asn	Tyr	
		35					40					45				
Asn	Asn	Gly	Pro	Val	Leu	Ser	Arg	Phe	Val	Gln	Lys	Val	Leu	Asp	Glu	
	50					55					60					

Thr	Gly	Ala	Lys	Lys	Val	Asp	Ile	Val	Ala	His	Ser	Met	Gly	Gly	Ala	
65					70					75						80
Asn	Thr	Leu	Tyr	Tyr	Ile	Lys	Asn	Leu	Asp	Gly	Gly	Asn	Lys	Ile	Glu	
			85						90					95		
Asn	Val	Val	Thr	Leu	Gly	Gly	Ala	Asn	Arg	Leu	Thr	Thr	Ser	Lys	Ala	
			100					105						110		
Leu	Pro	Gly	Thr	Asp	Pro	Asn	Gln	Lys	Ile	Leu	Tyr	Thr	Ser	Val	Tyr	
		115					120					125				
Ser	Ser	Ala	Asp	Met	Ile	Val	Met	Asn	Tyr	Leu	Ser	Lys	Leu	Asp	Gly	
	130					135					140					
Ala	Lys	Asn	Val	Gln	Ile	His	Gly	Val	Gly	His	Ile	Gly	Leu	Leu	Met	
145					150					155					160	
Asn	Ser	Gln	Val	Asn	Ser	Leu	Ile	Lys	Glu	Gly	Leu	Asn	Gly	Gly	Gly	
			165						170					175		
Leu	Asn	Thr	Asn													
			180													

<210> 82

<211> 180

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic peptide

<400> 82

Glu	His	Asn	Pro	Val	Val	Met	Val	His	Gly	Ile	Gly	Gly	Ala	Ser	Phe	
1				5					10					15		

Ser	Phe	Ala	Gly	Ile	Lys	Ser	Tyr	Leu	Val	Ser	Gln	Gly	Trp	Ser	Arg	
		20						25					30			

Gly	Lys	Leu	Tyr	Ala	Val	Asp	Phe	Trp	Asp	Lys	Thr	Gly	Thr	Asn	Tyr	
		35				40						45				

Asn	Asn	Gly	Pro	Val	Leu	Ser	Arg	Phe	Val	Gln	Lys	Val	Leu	Asp	Glu	
	50					55					60					

Thr	Gly	Ala	Lys	Lys	Val	Asp	Ile	Val	Ala	His	Ser	Met	Gly	Gly	Ala	
65					70					75						80

Asn	Thr	Leu	Tyr	Tyr	Ile	Lys	Asn	Leu	Asp	Gly	Gly	Asn	Lys	Ile	Glu	
			85						90					95		

Asn	Val	Val	Thr	Leu	Gly	Gly	Ala	Asn	Arg	Leu	Thr	Thr	Ser	Lys	Ala	
			100					105						110		

Leu	Pro	Gly	Thr	Asp	Pro	Asn	Gln	Lys	Ile	Leu	Tyr	Thr	Ser	Val	Tyr	
		115					120					125				

Ser	Ser	Ala	Asp	Met	Ile	Val	Met	Asn	Tyr	Leu	Ser	Lys	Leu	Asp	Gly	
	130					135					140					

Ala Lys Asn Val Gln Ile His Gly Val Gly His Ile Gly Leu Leu Met
 145 150 155 160

Asn Ser Gln Val Asn Ser Leu Ile Lys Glu Gly Leu Asn Gly Gly Gly
 165 170 175

Leu Asn Thr Asn
 180

<210> 83
 <211> 180
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 peptide

<400> 83
 Glu His Asn Pro Val Val Met Val His Gly Ile Gly Gly Ala Ser Tyr
 1 5 10 15

Ser Phe Ala Gly Ile Lys Ser Tyr Leu Val Ser Gln Gly Trp Ser Arg
 20 25 30

Gly Lys Leu Tyr Ala Val Asp Phe Trp Asp Lys Thr Gly Thr Asn Tyr
 35 40 45

Asn Asn Gly Pro Val Leu Ser Arg Phe Val Gln Lys Val Leu Asp Glu
 50 55 60

Thr Gly Ala Lys Lys Val Asp Ile Val Ala His Ser Met Gly Gly Ala
 65 70 75 80

Asn Thr Leu Tyr Tyr Ile Lys Asn Leu Asp Gly Gly Asn Lys Ile Glu
 85 90 95

Asn Val Val Thr Leu Gly Gly Ala Asn Arg Leu Thr Thr Ser Lys Ala
 100 105 110

Leu Pro Gly Thr Asp Pro Asn Gln Lys Ile Leu Tyr Thr Ser Val Tyr
 115 120 125

Ser Ser Ala Asp Met Ile Val Met Asn Tyr Leu Ser Lys Leu Asp Gly
 130 135 140

Ala Lys Asn Val Gln Ile His Gly Val Gly His Ile Gly Leu Leu Tyr
 145 150 155 160

Ser Ser Gln Val Asn Ser Leu Ile Lys Glu Gly Leu Asn Gly Gly Gly
 165 170 175

Gln Asn Thr Asn
 180

<210> 84
 <211> 180
 <212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic peptide

<400> 84

Glu	His	Asn	Pro	Val	Val	Met	Val	His	Gly	Ile	Gly	Gly	Ala	Ser	Tyr	
1				5					10					15		
Ser	Phe	Ala	Gly	Ile	Lys	Ser	Tyr	Leu	Val	Ser	Gln	Gly	Trp	Ser	Arg	
			20					25					30			
Gly	Lys	Leu	Tyr	Ala	Val	Asp	Phe	Trp	Asp	Lys	Thr	Gly	Thr	Asn	Tyr	
		35					40					45				
Asn	Asn	Gly	Pro	Val	Leu	Ser	Arg	Phe	Val	Gln	Lys	Val	Leu	Asp	Glu	
	50					55					60					
Thr	Gly	Ala	Lys	Lys	Val	Asp	Ile	Val	Ala	His	Ser	Met	Gly	Gly	Ala	
65					70					75					80	
Asn	Thr	Leu	Tyr	Tyr	Ile	Lys	Asn	Leu	Asp	Gly	Gly	Asn	Lys	Ile	Glu	
				85					90					95		
Asn	Val	Val	Thr	Leu	Gly	Gly	Ala	Asn	Arg	Leu	Thr	Thr	Ser	Lys	Ala	
			100					105						110		
Leu	Pro	Gly	Thr	Asp	Pro	Asn	Gln	Lys	Ile	Leu	Tyr	Thr	Ser	Val	Tyr	
		115					120					125				
Ser	Ser	Ala	Asp	Met	Ile	Val	Met	Asn	Tyr	Leu	Ser	Lys	Leu	Asp	Gly	
	130					135					140					
Ala	Lys	Asn	Val	Gln	Ile	His	Gly	Val	Gly	His	Thr	Gly	Leu	Leu	Met	
145					150					155					160	
Asn	Ser	Gln	Val	Asn	Ser	Leu	Ile	Lys	Glu	Gly	Leu	Asn	Gly	Gly	Gly	
			165						170					175		
His	Asn	Thr	Asn													
			180													

<210> 85

<211> 180

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic peptide

<400> 85

Glu	His	Asn	Pro	Val	Val	Met	Val	His	Gly	Ile	Gly	Gly	Ala	Ser	Tyr	
1				5					10					15		
Asn	Phe	Ala	Gly	Ile	Lys	Ser	Tyr	Leu	Val	Ser	Gln	Gly	Trp	Ser	Arg	
			20					25					30			
Gly	Lys	Leu	Tyr	Thr	Val	Asp	Phe	Trp	Asp	Lys	Thr	Gly	Thr	Asn	Tyr	

35					40					45						
Asn	Asn	Gly	Pro	Val	Leu	Ser	Arg	Phe	Val	Gln	Lys	Val	Leu	Asp	Glu	
50					55					60						
Thr	Gly	Ala	Lys	Lys	Val	Asp	Ile	Val	Ala	His	Ser	Met	Gly	Gly	Ala	
65					70					75					80	
Asn	Thr	Leu	Tyr	Tyr	Ile	Lys	Asn	Leu	Asp	Gly	Gly	Asn	Lys	Ile	Glu	
					85					90					95	
Asn	Val	Val	Thr	Leu	Gly	Gly	Ala	Asn	Arg	Leu	Val	Thr	Gly	Lys	Ala	
					100					105					110	
Leu	Pro	Gly	Thr	Asp	Pro	Asn	Gln	Lys	Ile	Leu	Tyr	Ala	Ser	Val	Tyr	
					115					120					125	
Ser	Ser	Ala	Asp	Met	Ile	Val	Met	Asn	Tyr	Leu	Ser	Lys	Leu	Asp	Gly	
					130					135					140	
Ala	Lys	Asn	Val	Gln	Ile	His	Gly	Val	Gly	His	Ile	Gly	Leu	Leu	Met	
145					150					155					160	
Asn	Ser	Gln	Val	Asn	Ser	Leu	Ile	Lys	Glu	Gly	Leu	Asn	Gly	Gly	Gly	
					165					170					175	
Leu	Asn	Thr	Asn													
				180												

<210> 86

<211> 180

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic peptide

<400> 86

Glu	His	Asn	Pro	Val	Val	Met	Val	His	Gly	Ile	Gly	Gly	Ala	Ser	Phe	
1					5					10					15	
Asn	Phe	Ala	Gly	Ile	Arg	Ser	Tyr	Leu	Val	Ser	Gln	Gly	Trp	Ser	Arg	
			20				25				30					
Gly	Lys	Leu	Tyr	Ala	Val	Asp	Phe	Trp	Asp	Arg	Thr	Gly	Thr	Asn	Tyr	
			35				40				45					
Asn	Asn	Gly	Pro	Val	Leu	Ser	Arg	Phe	Val	Gln	Lys	Val	Leu	Asp	Glu	
50					55					60						
Thr	Gly	Ala	Lys	Lys	Val	Asp	Ile	Val	Ala	His	Ser	Met	Gly	Gly	Ala	
65					70					75					80	
Asn	Thr	Leu	Tyr	Tyr	Ile	Lys	Asn	Leu	Asp	Gly	Gly	Asn	Lys	Ile	Glu	
					85					90					95	
Asn	Val	Val	Thr	Leu	Gly	Gly	Ala	Asn	Arg	Leu	Thr	Thr	Ser	Lys	Ala	
					100					105					110	

Leu Pro Gly Thr Asp Pro Asn Gln Lys Ile Leu Tyr Thr Ser Ile Tyr
 115 120 125
 Ser Ser Ala Asp Met Ile Val Met Asn Tyr Leu Ser Lys Leu Asp Gly
 130 135 140
 Ala Lys Asn Val Gln Ile His Gly Val Gly His Ile Gly Leu Leu Tyr
 145 150 155 160
 Ser Ser Gln Val Asn Ser Leu Ile Lys Glu Gly Leu Asn Gly Gly Gly
 165 170 175
 Leu Asn Thr Asn
 180

<210> 87
 <211> 180
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 peptide

<400> 87
 Glu His Asn Pro Val Val Met Val His Gly Ile Gly Gly Ala Ser Phe
 1 5 10 15
 Asn Phe Ala Gly Ile Arg Ser Tyr Leu Val Ser Gln Gly Trp Ser Arg
 20 25 30
 Gly Lys Leu Tyr Ala Val Asp Phe Trp Asp Lys Thr Gly Thr Asn Tyr
 35 40 45
 Asn Asn Gly Pro Val Leu Ser Arg Phe Val Gln Lys Val Leu Asp Glu
 50 55 60
 Thr Gly Ala Lys Lys Val Asp Ile Val Ala His Ser Met Gly Gly Ala
 65 70 75 80
 Asn Thr Leu Tyr Tyr Ile Lys Asn Leu Asp Gly Gly Asn Lys Ile Glu
 85 90 95
 Asn Val Val Thr Leu Gly Gly Thr Asn Arg Leu Thr Thr Ser Arg Ala
 100 105 110
 Leu Pro Gly Thr Asp Pro Asn Gln Lys Ile Leu Tyr Thr Ser Ile Tyr
 115 120 125
 Ser Ser Ala Asp Met Ile Val Met Asn Tyr Leu Ser Lys Leu Asp Gly
 130 135 140
 Ala Lys Asn Val Gln Ile His Gly Val Gly His Ile Gly Leu Leu Met
 145 150 155 160
 Asn Ser Gln Val Asn Ser Leu Ile Lys Glu Gly Leu Asn Gly Gly Gly
 165 170 175
 Leu Asn Thr Asn
 180

<210> 88
 <211> 180
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic peptide

<400> 88
 Glu His Asn Pro Val Val Met Val His Gly Ile Gly Gly Ala Ser Phe
 1 5 10 15
 Asn Phe Ala Gly Ile Lys Ser Tyr Leu Val Ser Gln Gly Trp Ser Arg
 20 25 30
 Asp Lys Pro Tyr Ala Val Asp Phe Trp Asp Lys Thr Gly Thr Asn Tyr
 35 40 45
 Asn Asn Gly Pro Val Leu Ser Arg Phe Val Gln Lys Val Leu Asp Lys
 50 55 60
 Thr Gly Ala Lys Lys Val Asp Ile Val Ala His Ser Met Gly Gly Ala
 65 70 75 80
 Asn Thr Leu Tyr Tyr Ile Lys Asn Leu Asp Gly Gly Asn Lys Val Glu
 85 90 95
 Asn Val Val Thr Leu Gly Gly Ala Asn Arg Leu Thr Thr Ser Lys Ala
 100 105 110
 Leu Pro Gly Thr Asp Pro Asn Gln Lys Ile Leu Tyr Thr Ser Ile Tyr
 115 120 125
 Ser Ser Ala Asp Met Ile Val Met Asn Tyr Leu Ser Lys Leu Asp Gly
 130 135 140
 Ala Lys Asn Val Gln Ile His Gly Val Gly His Ile Gly Leu Leu Met
 145 150 155 160
 Asn Ser Gln Val Asn Ser Leu Ile Lys Glu Gly Leu Asn Gly Gly Gly
 165 170 175
 Leu Asn Thr Asn
 180

<210> 89
 <211> 180
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic peptide

<400> 89
 Glu His Asn Pro Val Val Met Val His Gly Ile Gly Gly Ala Ser Phe
 1 5 10 15

Asn	Phe	Ala	Gly	Ile	Lys	Ser	Tyr	Leu	Val	Ser	Gln	Gly	Trp	Pro	Arg
			20					25					30		
Asp	Lys	Leu	Tyr	Ala	Val	Asp	Phe	Trp	Asp	Lys	Thr	Gly	Thr	Asn	Tyr
		35					40					45			
Asn	Asn	Gly	Pro	Val	Leu	Ser	Arg	Phe	Val	Gln	Lys	Val	Leu	Asp	Glu
	50					55					60				
Thr	Gly	Ala	Lys	Lys	Val	Asp	Ile	Val	Ala	His	Ser	Met	Gly	Gly	Ala
65					70					75					80
Asn	Thr	Leu	Tyr	Tyr	Ile	Lys	Asn	Leu	Asp	Gly	Gly	Asn	Lys	Val	Glu
			85						90					95	
Ser	Val	Val	Thr	Leu	Gly	Gly	Ala	Asn	Arg	Leu	Val	Thr	Gly	Lys	Ala
			100					105						110	
Leu	Pro	Gly	Thr	Asp	Pro	Asn	Gln	Lys	Ile	Leu	Tyr	Thr	Ser	Ile	Tyr
		115					120						125		
Ser	Ser	Ala	Asp	Met	Ile	Val	Met	Asn	Tyr	Leu	Ser	Lys	Leu	Asp	Gly
	130					135					140				
Ala	Lys	Asn	Val	Gln	Ile	His	Gly	Val	Gly	His	Ile	Gly	Leu	Leu	Met
145					150					155					160
Asn	Ser	Gln	Val	Asn	Ser	Leu	Ile	Lys	Glu	Gly	Leu	Asn	Gly	Gly	Gly
			165						170					175	
His	Asn	Thr	Asn												
			180												

<210> 90

<211> 180

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic peptide

<400> 90

Glu	His	Asn	Pro	Val	Val	Met	Val	His	Gly	Ile	Gly	Gly	Ala	Ser	Phe
1				5					10					15	

Ser	Phe	Ala	Gly	Ile	Arg	Ser	Tyr	Leu	Val	Ser	Gln	Gly	Trp	Pro	Arg
		20						25					30		

Asp	Lys	Leu	Tyr	Ala	Val	Asp	Phe	Trp	Asp	Lys	Thr	Gly	Thr	Asn	Tyr
		35					40					45			

Asn	Asn	Gly	Pro	Val	Leu	Ser	Arg	Phe	Val	Gln	Lys	Val	Leu	Asp	Glu
	50					55					60				

Thr	Gly	Ala	Lys	Lys	Val	Asp	Ile	Val	Ala	His	Ser	Met	Gly	Gly	Ala
65					70					75					80

Asn	Thr	Leu	Tyr	Tyr	Ile	Lys	Asn	Leu	Asp	Gly	Gly	Asn	Lys	Val	Glu
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

85					90					95					
Asn	Val	Val	Thr	Leu	Gly	Gly	Ala	Asn	Arg	Leu	Thr	Thr	Gly	Lys	Ala
			100					105					110		
Leu	Pro	Gly	Thr	Asp	Pro	Asn	Gln	Lys	Ile	Leu	Tyr	Thr	Ser	Val	Tyr
		115					120					125			
Ser	Ser	Ala	Asp	Met	Ile	Val	Met	Asn	Tyr	Leu	Ser	Lys	Leu	Asp	Gly
		130					135					140			
Ala	Lys	Asn	Val	Gln	Ile	His	Gly	Val	Gly	His	Ile	Gly	Leu	Leu	Met
145					150					155					160
Asn	Ser	Gln	Val	Asn	Arg	Leu	Ile	Lys	Glu	Gly	Leu	Asn	Gly	Gly	Gly
				165					170					175	
His	Asn	Thr	Asn												
			180												

<210> 91
 <211> 180
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic peptide

<400> 91															
Glu	His	Asn	Pro	Val	Val	Met	Val	His	Gly	Ile	Gly	Gly	Ala	Ser	Phe
1				5					10					15	
Ser	Phe	Ala	Gly	Ile	Arg	Ser	Tyr	Leu	Val	Ser	Gln	Gly	Trp	Pro	Arg
			20					25					30		
Asp	Lys	Leu	Tyr	Ala	Val	Asp	Phe	Trp	Asp	Lys	Thr	Gly	Thr	Asn	Tyr
		35					40					45			
Asn	Asn	Gly	Pro	Val	Leu	Ser	Arg	Phe	Val	Gln	Lys	Val	Leu	Asp	Glu
		50					55				60				
Thr	Gly	Ala	Lys	Lys	Val	Asp	Ile	Val	Ala	Tyr	Ser	Met	Gly	Gly	Ala
65					70					75					80
Asn	Thr	Leu	Tyr	Tyr	Ile	Lys	Asn	Leu	Asp	Gly	Gly	Asn	Lys	Val	Glu
				85					90					95	
Asn	Val	Val	Thr	Leu	Gly	Gly	Ala	Asn	Arg	Leu	Thr	Thr	Gly	Lys	Ala
			100					105					110		
Leu	Pro	Gly	Thr	Asp	Pro	Asn	Gln	Lys	Ile	Leu	Tyr	Thr	Ser	Val	Tyr
		115					120					125			
Ser	Ser	Ala	Asp	Met	Ile	Val	Met	Asn	Tyr	Leu	Ser	Lys	Leu	Asp	Gly
		130					135					140			
Ala	Lys	Asn	Val	Gln	Ile	His	Gly	Val	Gly	His	Ile	Gly	Leu	Leu	Met
145					150					155					160

Asn Ser Gln Val Asn Arg Leu Ile Lys Glu Gly Leu Asn Gly Gly Gly
165 170 175

His Asn Thr Asn
180

<210> 92

<211> 180

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
peptide

<400> 92

Glu His Asn Pro Val Val Met Val His Gly Ile Gly Gly Ala Ser Phe
1 5 10 15

Ser Phe Ala Gly Ile Arg Ser Tyr Leu Val Ser Gln Gly Trp Pro Arg
20 25 30

Asp Lys Leu Tyr Ala Val Asp Phe Trp Asp Lys Thr Gly Thr Asn Tyr
35 40 45

Asn Asn Gly Pro Val Leu Ser Arg Phe Val Gln Lys Val Leu Asp Glu
50 55 60

Thr Gly Ala Lys Lys Val Asp Ile Val Ala His Ser Met Gly Gly Ala
65 70 75 80

Asn Thr Leu Tyr Tyr Ile Lys Asn Leu Asp Gly Gly Asn Lys Val Gly
85 90 95

Asn Val Val Thr Leu Gly Gly Ala Asn Arg Leu Thr Thr Gly Lys Ala
100 105 110

Leu Pro Gly Thr Asp Pro Asn Gln Lys Ile Leu Tyr Thr Ser Val Tyr
115 120 125

Ser Ser Ala Asp Met Ile Val Met Asn Tyr Leu Ser Lys Leu Asp Gly
130 135 140

Ala Lys Asn Val Gln Ile His Gly Val Gly His Ile Gly Leu Leu Met
145 150 155 160

Asn Ser Gln Val Asn Arg Leu Ile Lys Glu Gly Leu Asn Gly Gly Gly
165 170 175

His Asn Thr Asn
180

<210> 93

<211> 180

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic

peptide

<400> 93

Glu	His	Asn	Pro	Val	Val	Met	Val	His	Gly	Ile	Gly	Gly	Ala	Ser	Phe
1				5					10					15	
Ser	Phe	Ala	Gly	Ile	Arg	Ser	Tyr	Leu	Val	Ser	Gln	Gly	Trp	Pro	Arg
			20					25					30		
Asp	Lys	Leu	Tyr	Ala	Val	Asp	Phe	Trp	Asp	Lys	Thr	Gly	Thr	Asn	Tyr
		35					40					45			
Asn	Asn	Gly	Pro	Val	Leu	Ser	Arg	Phe	Val	Gln	Lys	Val	Leu	Asp	Glu
	50					55					60				
Thr	Gly	Ala	Lys	Lys	Val	Asp	Ile	Val	Ala	His	Ser	Met	Gly	Gly	Ala
65					70					75					80
Asn	Thr	Leu	Tyr	Tyr	Ile	Lys	Asn	Leu	Asp	Gly	Gly	Asn	Lys	Val	Glu
			85						90					95	
Asn	Val	Val	Thr	Leu	Gly	Gly	Ala	Asn	Arg	Leu	Thr	Thr	Gly	Lys	Ala
			100					105					110		
Leu	Pro	Gly	Thr	Asp	Pro	Asn	Gln	Lys	Ile	Leu	Tyr	Thr	Ser	Val	Tyr
		115					120					125			
Ser	Ser	Ala	Asp	Met	Ile	Val	Met	Asn	Tyr	Leu	Ser	Lys	Leu	Asp	Gly
		130					135				140				
Ala	Lys	Asn	Val	Gln	Ile	His	Gly	Val	Gly	His	Ile	Gly	Leu	Leu	Met
145					150					155					160
Asn	Ser	Gln	Val	Asn	Arg	Leu	Ile	Lys	Glu	Gly	Leu	Asn	Gly	Gly	Gly
			165						170					175	
His	Asn	Thr	Asn												
			180												

<210> 94

<211> 180

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic peptide

<400> 94

Glu	His	Asn	Pro	Val	Val	Met	Val	His	Gly	Ile	Gly	Gly	Thr	Ser	Phe
1				5					10					15	
Asn	Phe	Ala	Gly	Ile	Lys	Ser	Tyr	Leu	Val	Ser	Gln	Gly	Trp	Ser	Arg
			20					25					30		
Asp	Lys	Leu	Tyr	Ala	Val	Asp	Phe	Trp	Asp	Lys	Thr	Gly	Thr	Asn	Tyr
		35					40					45			
Asn	Asn	Gly	Pro	Val	Leu	Ser	Arg	Phe	Val	Gln	Lys	Val	Leu	Asp	Glu
	50					55					60				

Thr Gly Ala Lys Lys Val Asp Ile Val Ala His Ser Met Gly Gly Ala
 65 70 75 80
 Asn Thr Leu Tyr Tyr Ile Lys Asn Leu Asp Gly Gly Asn Lys Ile Glu
 85 90 95
 Asn Val Val Thr Leu Gly Gly Ala Asn Arg Leu Thr Thr Ser Lys Ala
 100 105 110
 Leu Pro Gly Thr Asp Pro Asn Gln Lys Ile Leu Tyr Thr Ser Ile Tyr
 115 120 125
 Ser Ser Ala Asp Met Ile Val Met Asn Tyr Leu Ser Lys Leu Asp Gly
 130 135 140
 Ala Lys Asn Val Gln Ile His Gly Val Gly His Ile Gly Leu Leu Met
 145 150 155 160
 Asn Ser Gln Val Asn Ser Leu Ile Lys Glu Gly Leu Asn Gly Gly Gly
 165 170 175
 His Asn Thr Asn
 180

<210> 95
 <211> 180
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic peptide

<400> 95
 Glu His Asn Pro Val Val Met Val His Gly Ile Gly Gly Ala Ser Phe
 1 5 10 15
 Ser Phe Ala Gly Ile Lys Ser Tyr Leu Val Ser Gln Gly Trp Ser Arg
 20 25 30
 Asp Lys Leu Tyr Ala Val Asp Phe Ser Asp Lys Thr Gly Thr Asn Tyr
 35 40 45
 Asn Asn Gly Pro Val Leu Ser Arg Phe Val Gln Lys Val Leu Asp Glu
 50 55 60
 Thr Gly Ala Lys Lys Val Asp Ile Val Ala His Ser Met Gly Gly Ala
 65 70 75 80
 Asn Thr Leu Tyr Tyr Ile Lys Asn Leu Asp Gly Gly Asn Lys Ile Glu
 85 90 95
 Asn Val Val Thr Leu Gly Gly Ala Asn Arg Leu Thr Thr Ser Lys Ala
 100 105 110
 Leu Pro Gly Thr Asp Pro Asn Gln Lys Ile Leu Tyr Thr Ser Ile Tyr
 115 120 125
 Ser Ser Ala Asp Met Val Val Met Asn Tyr Leu Ser Lys Leu Asp Gly

130 135 140

Ala Lys Asn Val Gln Ile His Gly Val Gly His Ile Gly Leu Leu Met
 145 150 155 160

Asn Ser Gln Val Asn Ser Leu Ile Lys Glu Gly Leu Asn Gly Gly Gly
 165 170 175

His Asn Thr Asn
 180

<210> 96
 <211> 180
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 peptide

<400> 96

Lys His Asn Pro Val Val Met Val His Gly Ile Gly Gly Ala Ser Tyr
 1 5 10 15

Asn Phe Ala Gly Ile Lys Ser Tyr Leu Val Ser Gln Gly Trp Ser Arg
 20 25 30

Asp Lys Leu Tyr Ala Val Asp Phe Ser Asp Lys Thr Gly Thr Asn Tyr
 35 40 45

Asn Asn Gly Pro Val Leu Ser Arg Phe Val Gln Lys Val Leu Asp Glu
 50 55 60

Thr Gly Ala Lys Lys Val Asp Ile Val Ala His Ser Met Gly Gly Ala
 65 70 75 80

Asn Thr Leu Tyr Tyr Ile Lys Asn Leu Asp Gly Gly Asn Lys Ile Glu
 85 90 95

Asn Val Val Thr Leu Gly Gly Ala Asn Arg Leu Thr Thr Ser Lys Ala
 100 105 110

Leu Pro Gly Thr Asp Pro Asn Gln Lys Ile Leu Tyr Thr Ser Ile Tyr
 115 120 125

Ser Ser Ala Asp Met Ile Val Met Asn Tyr Leu Ser Lys Leu Asp Gly
 130 135 140

Ala Lys Asn Val Gln Ile His Gly Val Gly His Ile Gly Leu Leu Met
 145 150 155 160

Asn Ser Gln Val Asn Ser Leu Ile Lys Glu Gly Leu Asn Gly Gly Gly
 165 170 175

Leu Asn Thr Asn
 180

<210> 97
 <211> 180

<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 97
Glu His Asn Pro Val Val Met Val His Gly Ile Gly Gly Ala Ser Phe
1 5 10 15
Asn Phe Ala Gly Ile Lys Ser Tyr Leu Glu Ser Gln Gly Trp Ser Arg
20 25 30
Gly Lys Leu Tyr Ala Val Asp Phe Trp Asp Lys Thr Gly Thr Asn Tyr
35 40 45
Asn Asn Gly Pro Val Leu Ser Arg Phe Val Gln Lys Ala Leu Asp Glu
50 55 60
Thr Gly Ala Lys Lys Val Asp Ile Val Ala His Ser Met Gly Gly Ala
65 70 75 80
Asn Thr Leu Tyr Tyr Ile Lys Asn Leu Asp Gly Gly Asn Lys Ile Glu
85 90 95
Asn Val Val Thr Leu Gly Gly Ala Asn Arg Leu Thr Thr Ser Lys Ala
100 105 110
Leu Pro Gly Thr Asp Pro Asn Gln Lys Ile Leu Tyr Thr Ser Ile Tyr
115 120 125
Ser Ser Ala Asp Met Ile Val Met Asn Tyr Leu Ser Lys Leu Asp Gly
130 135 140
Ala Lys Asn Val Gln Ile His Gly Val Gly His Ile Gly Leu Leu Met
145 150 155 160
Asn Ser Gln Val Asn Ser Leu Ile Lys Glu Gly Leu Asn Gly Gly Gly
165 170 175
Gln Asn Thr Asn
180

<210> 98
<211> 180
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 98
Glu His Asn Pro Val Val Met Val His Gly Ile Gly Gly Ala Ser Phe
1 5 10 15
Asn Phe Ala Gly Ile Lys Ser Tyr Leu Val Ser Gln Gly Trp Ser Arg
20 25 30

Gly	Lys	Leu	Tyr	Ala	Val	Asp	Phe	Trp	Asp	Arg	Thr	Gly	Thr	Asn	Tyr
35						40						45			
Asn	Asn	Gly	Pro	Val	Leu	Ser	Arg	Phe	Val	Lys	Lys	Val	Leu	Asp	Glu
50						55						60			
Thr	Gly	Ala	Lys	Lys	Val	Asp	Ile	Val	Ala	His	Ser	Met	Gly	Gly	Ala
65			70						75			80			
Asn	Thr	Leu	Tyr	Tyr	Ile	Lys	Asn	Leu	Asp	Gly	Gly	Asn	Lys	Ile	Glu
			85						90			95			
Asn	Val	Val	Thr	Leu	Gly	Gly	Ala	Asn	Arg	Ser	Thr	Thr	Ser	Lys	Ala
			100			105						110			
Leu	Pro	Gly	Thr	Asp	Pro	Asn	Gln	Lys	Ile	Leu	Tyr	Thr	Ser	Ile	Tyr
115						120						125			
Ser	Ser	Ala	Asp	Met	Ile	Val	Met	Asn	Tyr	Leu	Ser	Lys	Leu	Asp	Gly
130						135						140			
Ala	Lys	Asn	Val	Gln	Ile	His	Gly	Val	Gly	His	Ile	Gly	Leu	Leu	Met
145			150						155			160			
Asn	Ser	Gln	Val	Asn	Ser	Leu	Ile	Lys	Glu	Gly	Leu	Asn	Gly	Gly	Gly
			165						170			175			
Gln	Asn	Thr	Asn												
180															

<210> 99
 <211> 180
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic peptide

B1
Cont.

<400> 99															
Glu	His	Asn	Pro	Val	Val	Met	Val	His	Gly	Ile	Gly	Gly	Ala	Ser	Phe
1				5				10				15			
Asn	Phe	Ala	Gly	Ile	Lys	Ser	Tyr	Leu	Val	Ser	Gln	Gly	Trp	Ser	Arg
			20				25				30				
Gly	Lys	Leu	Tyr	Ala	Val	Asp	Phe	Trp	Asp	Arg	Thr	Gly	Thr	Asn	Tyr
35						40						45			
Asn	Asn	Gly	Pro	Val	Leu	Ser	Arg	Phe	Val	Gln	Lys	Val	Leu	Asp	Glu
50						55						60			
Thr	Gly	Ala	Lys	Lys	Val	Asp	Ile	Val	Ala	His	Ser	Met	Gly	Gly	Ala
65			70						75			80			
Asn	Thr	Leu	Tyr	Tyr	Ile	Lys	Asn	Leu	Asp	Gly	Gly	Asn	Lys	Ile	Glu
			85						90			95			
Asn	Val	Val	Thr	Leu	Gly	Gly	Ala	Asn	Arg	Ser	Thr	Thr	Ser	Lys	Ala
			100			105						110			

Leu Pro Gly Thr Asp Pro Asn Gln Lys Ile Leu Tyr Thr Ser Ile Tyr
 115 120 125
 Ser Ser Ala Asp Met Ile Val Met Asn Tyr Leu Ser Lys Leu Asp Gly
 130 135 140
 Ala Lys Asn Val Gln Ile His Gly Val Gly His Ile Gly Leu Leu Met
 145 150 155 160
 Asn Ser Gln Val Asn Ser Leu Ile Lys Glu Gly Leu Asn Gly Gly Gly
 165 170 175
 His Asn Thr Asn
 180

<210> 100
 <211> 180
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 peptide

<400> 100
 Glu His Asn Pro Val Val Met Val His Gly Ile Gly Gly Ala Ser Phe
 1 5 10 15
 Asn Phe Ala Gly Ile Lys Ser Tyr Leu Val Ser Gln Gly Trp Ser Arg
 20 25 30
 Gly Lys Leu Tyr Ala Val Asp Phe Trp Asp Arg Thr Gly Thr Asn Tyr
 35 40 45
 Asn Asn Gly Pro Val Leu Ser Arg Phe Val Gln Lys Val Leu Asp Glu
 50 55 60
 Thr Gly Ala Lys Lys Val Asp Ile Val Ala His Ser Met Gly Gly Ala
 65 70 75 80
 Asn Thr Leu Tyr Tyr Ile Lys Asn Leu Asp Gly Gly Asn Lys Ile Glu
 85 90 95
 Asn Val Val Thr Leu Gly Gly Ala Asn Arg Ser Thr Thr Ser Lys Ala
 100 105 110
 Leu Pro Gly Thr Asp Pro Asn Gln Lys Ile Leu Tyr Thr Ser Ile Tyr
 115 120 125
 Ser Ser Ala Asp Met Ile Val Met Asn Cys Leu Ser Lys Leu Asp Gly
 130 135 140
 Ala Lys Asn Val Gln Ile His Gly Val Gly His Ile Gly Leu Leu Met
 145 150 155 160
 Asn Ser Gln Val Asn Ser Leu Ile Lys Glu Gly Leu Asn Gly Gly Gly
 165 170 175
 Gln Asn Thr Asn

B1
 Cont

<210> 101
 <211> 180
 <212> PRT
 <213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic peptide

<400> 101

Glu His Asn Pro Val Val Met Val His Gly Ile Gly Gly Ala Ser Phe
 1 5 10 15
 Asn Phe Ala Gly Ile Lys Ser Tyr Leu Val Ser Gln Gly Trp Ser Arg
 20 25 30
 Asp Lys Leu Tyr Ala Val Asp Phe Lys Asp Lys Thr Gly Thr Asn Tyr
 35 40 45
 Asn Asn Gly Pro Val Leu Ser Arg Phe Val Lys Lys Val Leu Asp Glu
 50 55 60
 Thr Gly Ala Lys Lys Val Asp Ile Val Ala His Ser Met Gly Gly Ala
 65 70 75 80
 Asn Thr Leu Tyr Tyr Ile Lys Asn Leu Asp Gly Gly Asn Lys Ile Glu
 85 90 95
 Asn Val Val Thr Leu Gly Gly Ala Asn Arg Ser Thr Thr Ser Lys Ala
 100 105 110
 Leu Pro Gly Thr Asp Pro Asn Gln Lys Ile Leu Tyr Thr Ser Val Tyr
 115 120 125
 Ser Ser Ala Asp Met Ile Val Met Asn Tyr Leu Ser Lys Leu Asp Gly
 130 135 140
 Ala Lys Asn Val Gln Ile His Gly Val Gly His Ile Gly Leu Leu Met
 145 150 155 160
 Asn Ser Gln Val Asn Ser Leu Ile Lys Glu Gly Leu Asn Gly Gly Gly
 165 170 175
 Leu Asn Thr Asn
 180

<210> 102
 <211> 180
 <212> PRT
 <213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic peptide

<400> 102

Glu His Asn Pro Val Val Met Val His Gly Ile Gly Gly Ala Ser Phe

1	5	10	15
Asn Phe Ala Gly Ile Lys Ser Tyr Leu Val Ser Gln Gly Trp Ser Arg	20	25	30
Asp Lys Leu Tyr Ala Val Asp Phe Trp Asp Lys Thr Gly Thr Asn Tyr	35	40	45
Asn Asn Gly Pro Val Leu Ser Arg Phe Val Lys Lys Val Leu Asp Glu	50	55	60
Thr Gly Ala Lys Lys Val Asp Ile Val Ala His Ser Met Gly Gly Ala	65	70	80
Asn Thr Leu Tyr Tyr Ile Lys Asn Leu Asp Gly Gly Asp Lys Ile Glu	85	90	95
Asn Val Val Thr Leu Gly Gly Ala Asn Arg Ser Thr Thr Ser Lys Ala	100	105	110
Leu Pro Gly Thr Asp Pro Asn Gln Lys Ile Leu Tyr Thr Ser Val Tyr	115	120	125
Ser Ser Ala Asp Met Ile Val Met Asn Tyr Leu Ser Lys Leu Asp Gly	130	135	140
Ala Lys Asn Val Gln Ile His Gly Val Gly His Ile Gly Leu Leu Met	145	150	160
Asn Ser Gln Val Asn Ser Leu Ile Lys Glu Gly Leu Asn Gly Gly Gly	165	170	175
Gln Asn Thr Asn	180		

<210> 103
 <211> 180
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic peptide

<400> 103
 Glu His Asn Pro Val Val Met Val His Gly Ile Gly Gly Ala Ser Phe
 1 5 10 15
 Asn Phe Ala Gly Ile Lys Ser Tyr Leu Val Ser Gln Gly Trp Ser Arg
 20 25 30
 Asp Lys Leu Tyr Ala Val Asp Phe Trp Gly Lys Thr Gly Thr Asn Tyr
 35 40 45
 Asn Asn Gly Pro Val Leu Ser Arg Phe Val Lys Lys Val Leu Asp Glu
 50 55 60
 Thr Gly Ala Lys Lys Val Asp Ile Val Ala His Ser Met Gly Gly Ala
 65 70 75 80

B1
Cont

Asn Ser Gln Val Asn Ser Leu Ile Lys Glu Gly Leu Asn Gly Gly Gly
 165 170 175

Gln Asn Thr Asn
 180

<210> 105
 <211> 180
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic peptide

<400> 105
 Glu His Asn Pro Val Val Met Val His Gly Ile Gly Gly Ala Ser Phe
 1 5 10 15

Asn Phe Ala Gly Ile Lys Ser Tyr Leu Val Ser Gln Gly Trp Ser Arg
 20 25 30

Gly Lys Leu Tyr Ala Val Asp Phe Lys Asp Lys Thr Gly Thr Asn Tyr
 35 40 45

Asn Asn Gly Pro Val Leu Ser Arg Phe Val Lys Lys Val Leu Asp Glu
 50 55 60

Thr Gly Ala Lys Lys Val Asp Ile Val Ala His Ser Met Gly Gly Ala
 65 70 75 80

Asn Thr Leu Tyr Tyr Ile Lys Asn Leu Asp Gly Gly Asn Lys Ile Glu
 85 90 95

Asn Val Val Thr Leu Gly Gly Ala Asn Arg Ser Thr Thr Ser Lys Ala
 100 105 110

Leu Pro Gly Thr Asp Pro Asn Gln Lys Ile Leu Tyr Thr Ser Ile Tyr
 115 120 125

Ser Ser Ala Asp Met Ile Val Met Asn Tyr Leu Ser Lys Leu Asp Gly
 130 135 140

Ala Lys Asn Val Gln Ile His Gly Val Gly His Ile Gly Leu Leu Met
 145 150 155 160

Asn Ser Gln Val Asn Ser Leu Ile Lys Glu Gly Leu Asn Gly Gly Gly
 165 170 175

Gln Asn Thr Asn
 180

<210> 106
 <211> 180
 <212> PRT
 <213> Artificial Sequence

<220>

B1
 Cont

<223> Description of Artificial Sequence: Synthetic peptide

<400> 106

Lys His Asn Pro Val Val Met Val His Gly Ile Gly Gly Ala Ser Phe
1 5 10 15

Asn Phe Ala Gly Ile Lys Ser Tyr Leu Val Ser Gln Gly Trp Ser Arg
20 25 30

Asp Glu Leu Tyr Ala Val Asp Phe Trp Asp Glu Thr Gly Thr Asn Tyr
35 40 45

Asn Asn Gly Pro Val Leu Ser Arg Phe Val Gln Lys Val Leu Asp Glu
50 55 60

Thr Gly Ala Lys Lys Val Asp Ile Val Ala His Ser Met Gly Gly Ala
65 70 75 80

Asn Thr Leu Tyr Tyr Ile Lys Asn Leu Asp Gly Gly Asn Lys Ile Glu
85 90 95

Asn Val Val Thr Leu Gly Gly Ala Asn Arg Ser Thr Thr Ser Lys Ala
100 105 110

Leu Pro Gly Thr Asp Pro Asn Gln Lys Ile Leu Tyr Thr Ser Ile Tyr
115 120 125

Ser Ser Ala Asp Met Ile Val Met Asn Tyr Leu Ser Lys Leu Asp Gly
130 135 140

Ala Lys Asn Val Gln Ile His Gly Val Gly His Ile Gly Leu Leu Met
145 150 155 160

Asn Ser Gln Val Asn Ser Leu Ile Lys Glu Gly Leu Asn Gly Gly Gly
165 170 175

Gln Asn Thr Asn
180

<210> 107

<211> 180

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic peptide

<400> 107

Glu His Asn Pro Val Val Met Val His Gly Ile Gly Gly Ala Ser Phe
1 5 10 15

Asn Phe Ala Gly Ile Lys Ser Tyr Leu Val Ser Gln Gly Trp Ser Arg
20 25 30

Asp Lys Leu Tyr Ala Val Asp Phe Trp Asp Lys Thr Gly Thr Asn Tyr
35 40 45

Asn Asn Gly Pro Val Leu Ser Arg Phe Val Gln Lys Val Leu Asp Glu

50					55					60					
Thr	Gly	Ala	Lys	Lys	Val	Asp	Ile	Val	Ala	His	Ser	Met	Gly	Gly	Ala
65					70					75					80
Asn	Thr	Leu	Tyr	Tyr	Ile	Lys	Asn	Leu	Asp	Gly	Gly	Asn	Lys	Val	Glu
			85						90					95	
Asn	Val	Val	Thr	Leu	Gly	Gly	Ala	Asn	Arg	Ser	Thr	Thr	Ser	Lys	Ala
			100					105					110		
Leu	Pro	Gly	Thr	Asp	Pro	Asn	Gln	Lys	Ile	Leu	Tyr	Thr	Ser	Ile	Tyr
		115					120					125			
Ser	Ser	Ala	Asp	Met	Ile	Val	Met	Asn	Tyr	Leu	Ser	Lys	Leu	Asp	Gly
	130					135					140				
Ala	Lys	Asn	Val	Gln	Ile	His	Gly	Val	Gly	His	Ile	Gly	Leu	Leu	Met
145					150					155					160
Asn	Ser	Gln	Val	Asn	Ser	Leu	Ile	Lys	Glu	Gly	Leu	Asn	Gly	Gly	Gly
			165						170					175	
Gln	Asn	Thr	Asn												
			180												

<210> 108

<211> 180

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic peptide

<400> 108

Glu	His	Asn	Pro	Val	Val	Met	Val	His	Gly	Ile	Gly	Gly	Ala	Ser	Phe
1				5					10					15	
Asn	Phe	Ala	Gly	Ile	Lys	Ser	Tyr	Leu	Val	Ser	Gln	Gly	Trp	Ser	Arg
		20						25					30		
Gly	Lys	Leu	Tyr	Ala	Val	Asp	Phe	Trp	Asp	Lys	Thr	Gly	Thr	Asn	Tyr
		35				40						45			
Asn	Asn	Gly	Pro	Val	Leu	Ser	Arg	Phe	Val	Gln	Lys	Val	Leu	Asp	Glu
	50					55					60				
Thr	Gly	Ala	Lys	Lys	Val	Asp	Ile	Val	Ala	His	Ser	Met	Gly	Gly	Ala
65					70					75					80
Asn	Thr	Leu	Tyr	Tyr	Ile	Lys	Asn	Leu	Asp	Gly	Gly	Asn	Lys	Ile	Glu
			85						90					95	
Asn	Val	Val	Thr	Leu	Gly	Gly	Ala	Asn	Arg	Ser	Thr	Thr	Ser	Lys	Ala
			100					105					110		
Leu	Pro	Gly	Thr	Asp	Pro	Asn	Gln	Lys	Ile	Leu	Tyr	Thr	Ser	Ile	Tyr
		115					120					125			

B1
Cont

Ser Ser Ala Asp Met Ile Val Met Asn Tyr Leu Ser Lys Leu Asp Gly
130 135 140

Ala Lys Asn Val Gln Ile His Gly Val Gly His Ile Gly Leu Leu Met
145 150 155 160

Asn Ser Gln Val Asn Ser Leu Ile Lys Glu Gly Leu Asn Gly Gly Gly
165 170 175

Gln Asn Thr Asn
180

<210> 109

<211> 20

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
peptide

<400> 109

Asp His Asn Pro Val Ile Met Val His Gly Met Gly Gly Ala Ser Tyr
1 5 10 15

Asn Phe Ala Gly
20

<210> 110

<211> 20

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
peptide

<400> 110

Asp His Gln Pro Val Val Val Val His Gly Ile Gly Gly Ser Ser Phe
1 5 10 15

Asn Phe Ser Gly
20

<210> 111

<211> 15

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 111

gagcataacc ccgtg

15